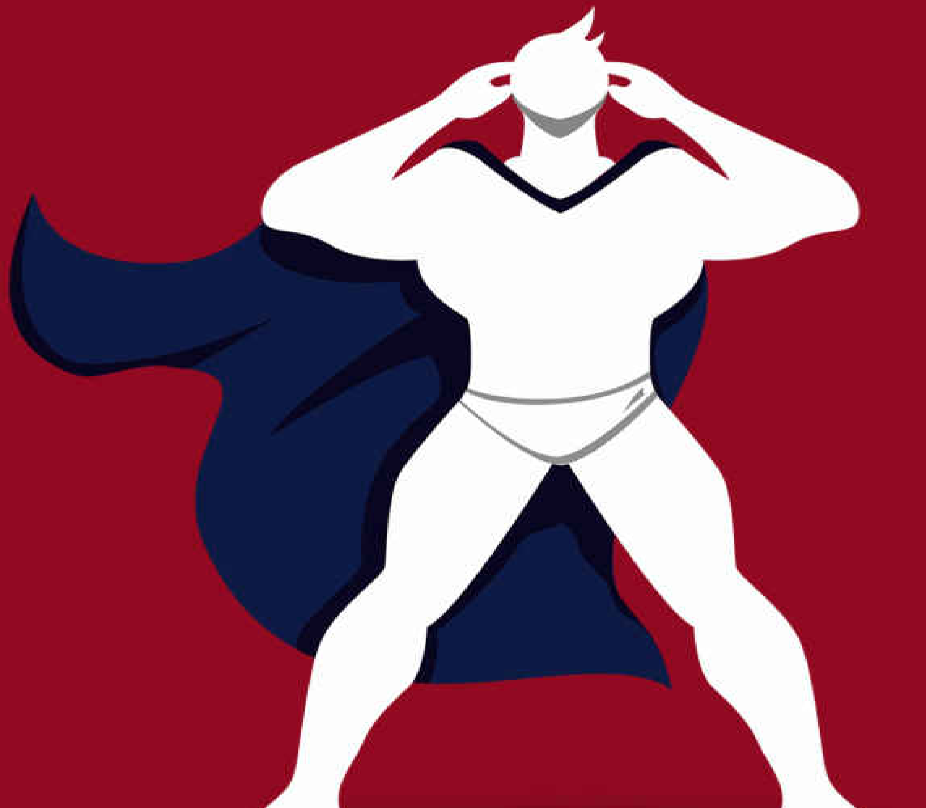
PHOTOGRAPHIC MEMORY

Learning Methods to Learn Faster, Remember More Unlocking Your Photographic Memory Potential

(Accelerated Learning: Memory Rescue)



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Lewis Fischer

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Foreword

Don’t take your memory for granted. It is something that gives you your personality and facilitates your character. It is also the thing that allows us continuity in our lives and thereby an essential factor in our performance, our successes and even our suffering. Our memory is the vessel that holds all we hold dear, and the reminder of mistakes made in the past.

Our memory functions in a way that is far beyond any computer’s hard drive and it exists on many levels. From the basic so-called muscle memory (or what we call sensory memory) that athletes depend on for their repeated touchdowns, to you being able to climb a flight of stairs.

Then there is short-term memory. The memory that lasts as long as an echo. It is there for continuity and for momentary awareness. This memory gives us the ability to keep our composure and reflect, process and discard/store events that are worth longer memory.

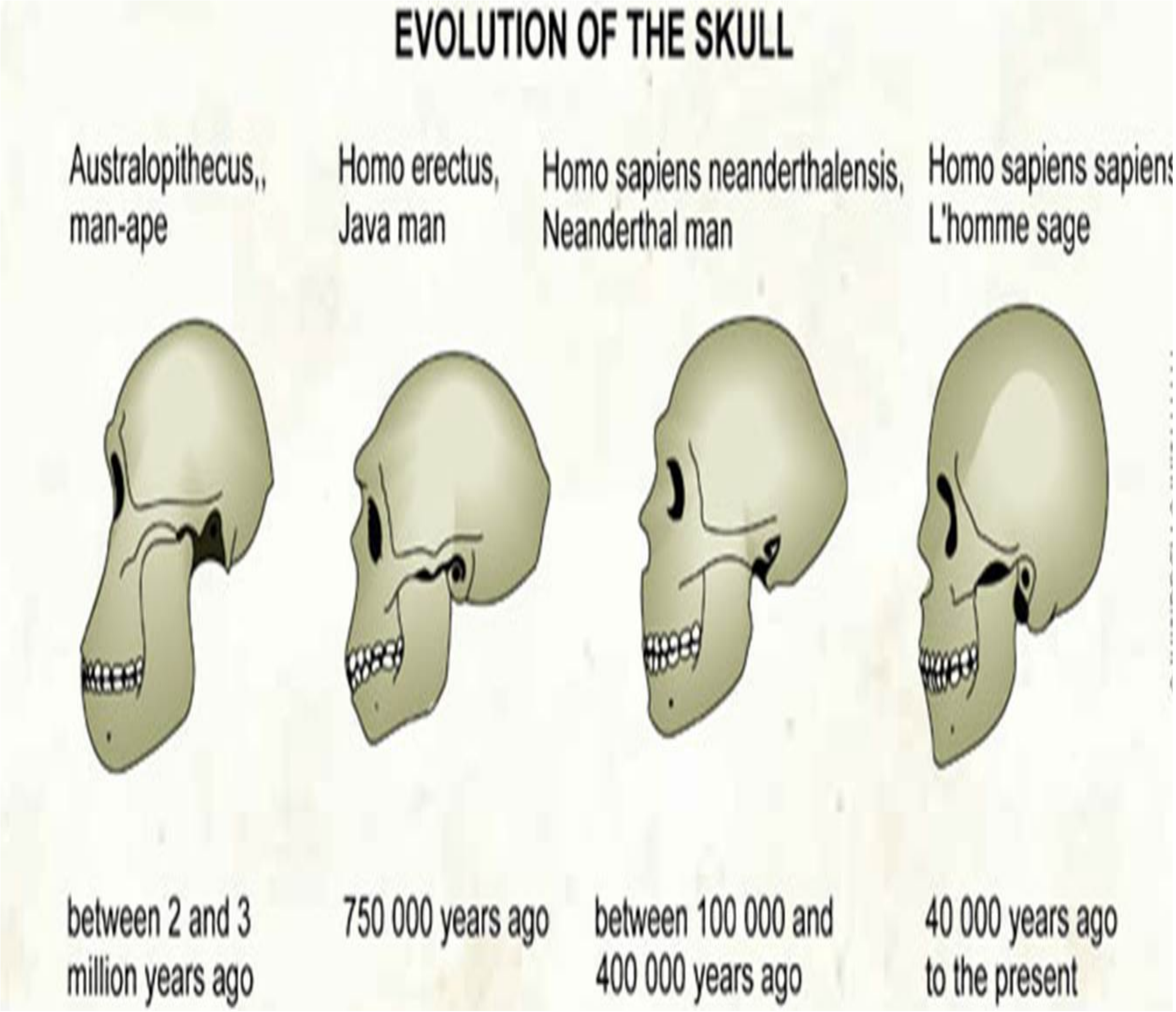
We also have something called explicit memory. Explicit memory is the one that we consciously have in our heads – like when you willfully recall a phone number of an acquaintance. This is the kind of memory that you actually put in the effort to extract. In many cases when you say the word ‘memory’ this is what people would refer to. They equate memory with the things that they remember.

Related to that is the implicit memory where you just know the answer as the query is raised. For instance, if I were to pose, “What is 2 x 2?’ You would automatically, and almost instinctively rip out the answer. Or if you pick up a phone and dial in your best friend’s number, you wouldn’t even have to think about it – it would just seem to flow from you. There would be no effort to locate the data.

Then there is the memory of self. There are things about ourselves that we remember in different ways. There are three specific self-memories that we have. The first is the memory of what really happened to us. The second is the memory of what we would like to have happened to us, and third is the repressed memories of things that we try to bury.

Finally, there is memory of information and data. There is a matrix of memory here and this is the area that we will spend the most time in this book because memory exercises and goals of attaining better memory are typically directed to this area. This is where our school work resides, this is where our vocational training, our technical knowledge and our academic baggage is stored.

As the human species evolved this part of the brain and the mind that hold the memories of shallow and deep events has evolved more rapidly than any other part especially in the last five thousand years. Scientists even believe that the reason for this is both the cause and the reason for our advances in technology.

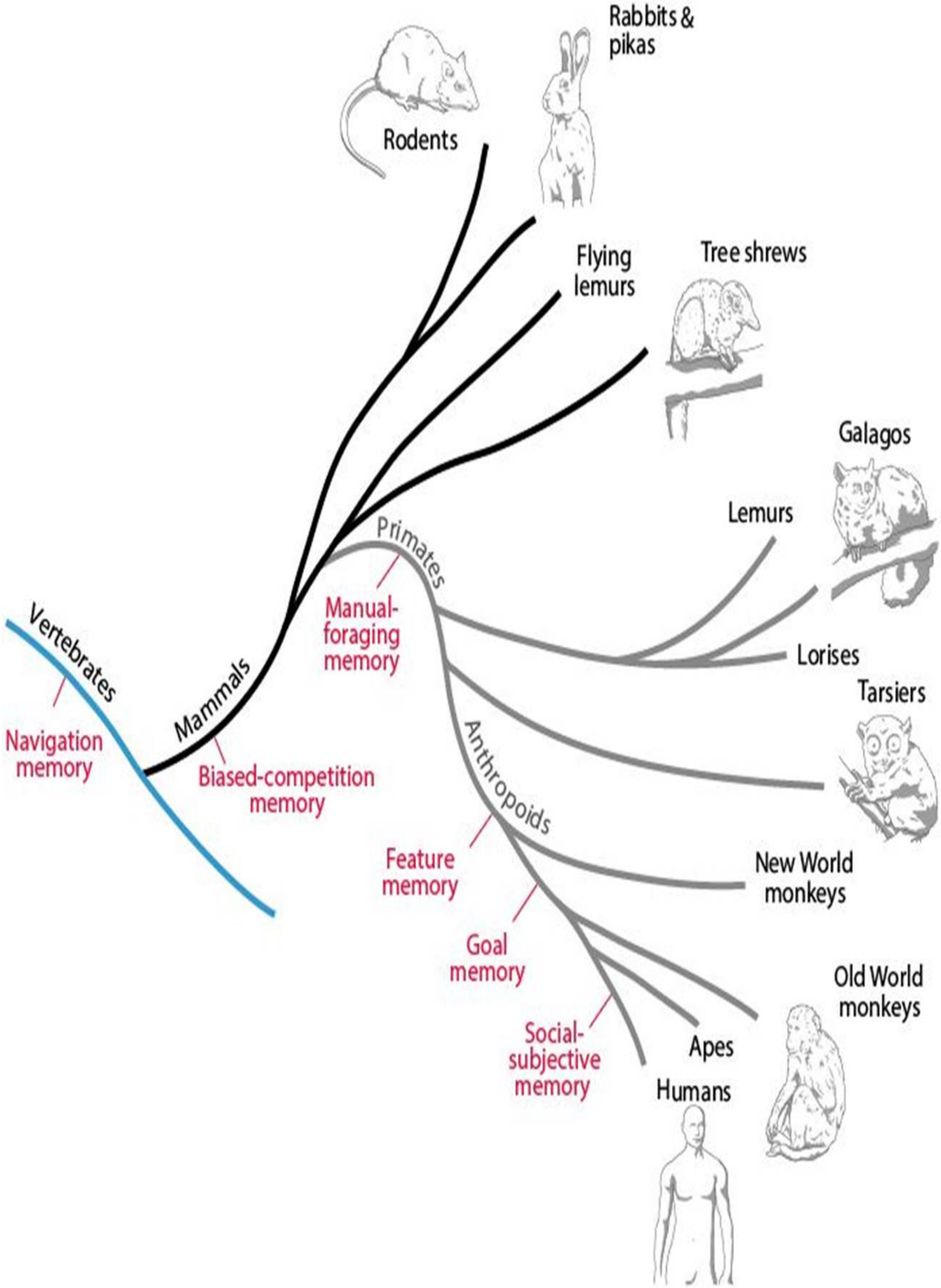

EVOLUTION OF THE SKULL
Australopithecus,, man-ape
Homo erectus, Java man
Homo sapiens neanderthalensis, Neanderthal man
Homo sapiens sapiens
L'homme sage
between 2 and 3 million years ago
750 000 years ago
between 100 000 and 400 000 years ago
40 000 years ago to the present

The human brain has evolved not because it is searching for the perfect form. Rather the human form and thus, the trajectory of the brain's development is the result of a delicate balance of nature and desire.

Our desire is to progress is an innate force that drives every aspect of our existence. From the way we have evolved to the top of the food chain to the way we have thought of, created and advanced the next generation of thinking species in the form of Artificial Intelligence.

The old notions of how the brain worked have been thrown out in recent years. Scientists from Oxford to Harvard have turned our erroneous understanding of the brain on its head and found that all this time we have failed to understand the brain because we have failed to take evolution into consideration.

The entire discussion of evolution and the way the brain has slowly formed over millennia across species and along our ancestral development has been deemed inadequate at best, and totally false at worse. But with the inclusion of evolution along with the theories of natural selection and mutation, we have found that the brain, the mind on top of it, and the memories within it, are not what we thought they were and not as mysterious as we made them out to be.


Rabbits &
pikas
Rodents
Flying
lemurs
Tree shrews
Galagos
Lemurs
Lorises
Tarsiers
Primates
Manual-
foraging
memory
Vertebrates
Navigation
memory
Mammals
Biased-competition
memory
Anthropoids
Feature
memory
New World
monkeys
Goal
memory
Old World
monkeys
Social-
subjective
memory
Apes
Humans

To go into the details of the evolutionary aspects of memory would be beyond the scope of this book, but a cursory topography of it would serve all of you well in understanding and internalizing the concepts of memorization and the methods of improving it, speeding it up and extending its longevity.

Oxford scientists and researchers have conclusively proven that the development of the brain was indeed situation-specific. Rodents had different brain function arising out of the different requirements they faced. On the other hand, simians had a more evolved ability that eventually endowed the human brain with what we have today.

As such the conclusion that we can come up with, which is supported by scientific evidence is that the brain takes the shape of the environment that surrounds it, and then goes on to shape that same environment. So while we are a slave to our brain's nature, we are also the master of our own destiny.

As vertebrates evolved and branched into mammals, the first mammals developed biased-competition memory. See diagram above. This is a significant leap and formed the basis of the human brain as well. Biased competition memory is the memory that is made based on what occupies our mind at the moment. Rodents like rats that were part of the original brave of evolution relied on this form of memory to activate the neurons that gave them the edge in foraging and survival. When this type of memory evolved into being it allowed the animals that had this memory to recollect what it needed based on the situation it was in. This was the first step in memory evolution that we know about and it saw the development of the neocortex.

From there the brain continued its ascendance, next developing manual foraging memory in early primates. This allowed the animals to reach for and harvest low hanging assets. They were able to remember how to access and harvest, reach and coordinate as well as improve on skills learned. This showed the emergence of a form of memory that was limited to the neocortex rather than the primary cortex that developed at the onset of animals. The evolution of memory was very much the factor of the surrounding environment.

Then there was a leap in the functions of the brain. Not only could they remember where and how to forage for food, they could now start to remember things that were a little more abstract – like distances. This gave rise to migration and the ability to reach distant lands and populate the areas that offered fresh supplies of food, water, and shelter. The memory systems that evolved did so with the genesis of the temporal and parietal lobes and were able to store and recall qualitative and quantitative aspects of their observation.

Next came the frontal lobe, the youngest of all till now. With the entry of this new area, one that had higher brain functions and gave the host a much higher level of intelligence, and an important ability - the ability to set goals. This ability to set goals was a significant achievement as it required huge leaps in memory ability and imagination. If you can’t remember your goal what would be the point of having them, and if you had no way of imagining, you wouldn’t be able to plan. So, the frontal cortex was a quantum leap forward in terms of evolution. This is where we were able to develop communication, advance into the ultimate form of imagination – math, and bring to life the idea that formed the basis of the technology and the advances that we now have. Just going from plucking berries to developing stone tools was a giant leap, when you really think about the fact that the brain is physical tissue that holds abstract knowledge.

But the brain didn’t stop there. Its advances are significant, and they continue to march forward. We developed such neurophysiology because the need for such a brain kept forcing our internal design to come up with solutions that could continuously develop, remember, analyze, create, and do all the things that we can now do, from paint the Sistine Chapel, to building rockets that fly into the depths of space.

In the last three decades, we have made significant advances in the fields of neuroscience and psychology, allowing us better knowledge, understanding, and insight into the brain, the mind and the psyche of the human species, and living organisms in general. The interesting thing about these advances is that they are not just some esoteric discovery that impacts us from a distance. No. The advances have been significant, immediate, and continues to directly impact every facet of our daily lives.

With advances in neuroscience, we have found that isolating disciplines of the brain only gets us so far, then we hit a brick wall. We also instinctively know that there is more to the brain than just being a control center for internal bodily functions. It is also a tool to communicate and connect with the objects that occupy the environment around us.

Imagine a glass of water. Into this water, we add two color pigments: red and blue. Initially, you see them in three distinct layers, the red, the blue and the clear. In time the molecules of these pigments diffuse through the water and eventually you move from three distinct shades to one homogeneous purple suspended in a matrix of water.

What the process of diffusion does to those pigments, our brain does for us by helping us assimilate the essence and information of our surrounding - it helps us to mingle, learn, take on other practices and homogenize our individuality. That is how we grow as individuals, and how we advance as a species.

We can’t visually look at it, but what we know to be intangible thoughts and memories are actually physical connections that are made in the brain. The brain, and what goes on within it, is a juxtaposition of what is tangible in nature to what is intangible - look at it this way, holding your pen in your hand is tangible. Thinking and visualizing that same pen is intangible. There is another twist to it. What we just determined to be an intangible thought, memory, or vision, is actually caused by a physical, hence tangible, mental phenomenon. This phenomenon is the building of neural pathways. When a memory is formed, regardless of its origin, these strands are built. The more we are exposed to this experience, the stronger this fragment becomes, sometimes creating more than one neural pathway to the same outcome.

Thus the next step in true understanding is achieved by combining disciplines and looking at how the mind, brain, consciousness and the universe all work holistically. Neuropsychology is such a combination of disciplines, where we look at the structure of the brain, and the nature of the mind that is built on top of it. But that’s theoretical and as important as it is in the grand scheme of things, what flows from it is more important, and that is what lies at the core of our thesis in this book – memory.

The juxtaposition of neuroscience and psychology is of deep interest, as it has the potential to catapult our species forward at rates we can’t even imagine and haven't yet seen. This area of neuroplasticity which is not exactly at its nascent stages is practical, functional and result oriented. Neuroplasticity is the fundamental foundation of all the capabilities of our brain, and that includes memorizing and self-awareness.

We consider neuroplasticity to be the focus of both the hard science of neuroscience and the soft science of psychology because one influences the other, and vice versa. You can have neurons influence psychology and the way you think and act, and you can have the way you think and act influence the neural pathways. That is how our species is built - by mimicking. When we mimic a certain act, that builds a neural pathway and slowly, before long, the act we once mimicked becomes our own. That's a form of memory.

Neuroplasticity comes from the combination of two words, neuro, and plasticity. Neuro is something that we can fairly easily figure out and know that it has something to do with the brain. But plasticity is not something we come across very often, What it means is the malleability and flexibility - as something made of plastic would feel and look like, but more importantly behave like.

Essentially, neuroplasticity is the study of how the brain physically changes during one's lifetime to adapt to the circumstances it faces. That circumstance can be the recovery from a stroke or the memorization of an entire play. The change can be structural - the recovery from a stroke, for instance; the change can be environmental - exposure to increased carbon monoxide; or it can be from ideological surroundings and cultural values. The physical brain constantly changes according to the forces it is subjected to, like plastic - thus the reference to plasticity. The brain's ability to respond to injury, stimuli and other parameters are no longer mere theory, they are verifiable proof.

There has been an increasing number of cases where patients who have suffered from mild to severe stroke were able to rehabilitate their condition and return to full upright biped mobility and ambidexterity because our brain is able to find alternate neural pathways to accomplish the connection between command and execution.

The fact that the brain is malleable is no longer in contention. Using this fact to rehabilitate injury, improve functionality, advance scope and possibly push the boundaries of what we know, is no longer wishful thinking but rather undeniable reality. That is the direction we will take with this book. We are not focusing on the medical or rehabilitative uses of the knowledge we have gained from neuroplasticity, but rather we are looking at using it to form the basis of creating a life that our conscious mind desires.

This book undertakes to accomplish three tasks in bringing the world of neuroplasticity to the everyday reader and to his or her idea of improving it in a way they see fit. It shows the reader the possibility that each person has the ability to alter and adjust the shape and resistance of his or her own mind. This is the power of the gods because when you alter the shape of the mind, you are essentially changing your destiny.

Each person is born into this world with a certain set of gifts - from the geography of his birth to the geopolitical fortunes of his society. He is even subjected to environmental conditions and ideological pressures. But all those are mere forces, external to his internal being.

If we can understand that each person is the result of the forces that are acted upon him on the outside and the forces within him that respond on the inside, then we begin to understand the shape that a man's psyche begins to take. At the center of those forces are the brain and the human mind.

In addition to that, time is the next dimension we need to factor into all this. Those neural pathways can be determined as a function of time as well. If there are repeated stimuli that causes a memory formation. Then those pathways get stronger and last longer. When the stimuli cease, then the pathways atrophy - over time it becomes inconsequential - something we refer to as 'forgetting'.

Three elements are at play when we think about our existence. Emptiness, substance, and time. All three are represented adequately in the brain and its processes, and these are what mold the brain into what it is at any single point in time This is essentially the field of neuroplasticity.

A good place to start in the effort to understand the workings of the psyche and the way neuroplasticity works, we need to look at how the brain works and how it is the foundation of the mind, and how the mind becomes the foundation for the psyche.

The physical melds into the intangible in a way that makes it difficult for us to always look at only one thing and nor the other. The path this book takes is designed to gently hug the contours of the landscape and introduce the facts of the brain, the mind and the actions that flow from it, and how it all also works in reverse. Thus it is important that we understand how the brain works from a cellular perspective and from a notional one.

Introduction

You are in for quite the journey. You are about to take the bull by its horns and understand what makes him tick. You are going to do all this with one express purpose and that is to make it work harder, stronger and faster for you. You are going to dive into the recesses of your mind and open it up so that you can conquer the world of knowledge and the world of information around you.

You are about to learn how to access the data, file it and access it later without any trouble. Why should you do all this? Well, because if you can up the greatest asset that you are endowed with, then you are going to change the trajectory of your life. Have you ever seen a person with a dull mind achieve anything spectacular? No, because to do something spectacular you need to visualize it and you need to chart a path to it.

There are a million reasons why someone would want to enhance his memory. I've seen people want to do it because they want to do tricks for their friends at parties. I've even seen people do it because they are afraid that they are starting to lose their memories due to age. The reasons are as diverse as the thumbprints we each hold. Whatever your reason, it's all good. What we are going to do is look at the power of the brain and the brilliance of the mind.

From there we are going to look at the mechanism of the memory aspect of our brain and how it works. We are going to look at the brain and the mind that comes on top of it. They are not the same thing 0 as much as many people use the terms interchangeably. We will also look at the quality of memories. The quality of a memory is based on how fast it becomes a long-term memory, and how accurate it is explicitly over the course of time. Be rest assured that forgetting is a physical part of memory. There is a physical change that happens when we form a memory and that change erodes over time. It's like if you build a bridge over a stream. After some time, due to weather and natural degradation, the bridge eventually fails. But if there is a municipality in the neighborhood charges with the upkeep and maintenance then, that bridge lasts for as long as there is use. The same with memories. If you use the memory often, then the body is charged with keeping the memory intact. If you don’t use the memory often, then in time that memory will eventually degrade and be forgotten. What would be left is the memory that you had the memory but not the memory itself.

Think of it like this. Can you still remember your phone number from when you were a kid? Assuming it has changed, and you haven’t used it for a while, you probably forgot it quite sometime back. You know you had a phone and you know you’ve called it a million times without even thinking of the number but then now it is gone. I admit there are some of you who could recall it if you tried but most of us will forget if we don’t use it – memory is typically a use it or lose it prospect.

We will then look at the components of a memory and how you should think about it. You can have superb memory if you just manage to do only one of these things better. We will show you how to differentiate between the types of memories and the types of ways we create, store and retrieve them. How we create them is just as important as how we store them when it comes to perfect recall. We will show you how.

Then we look at photographic memory and eidetic memory. Yes, photographic memory is real and it is not something that was made up for parlor tricks either. Photographic memory is either something that you naturally experience, or it can be something that you train yourself to do. Just like playing the piano, there are some prodigies that catch on and play it instinctively while there are some maestros that take years of practice and eventually become great as well. There isn’t just one way to be great at something and that includes having a good memory as well.

If you had to break up the responsibilities of the mind, you could do it into three. Of course, there are more, but let's look at the broad aspects of the three. The first would be the autonomous functions of the body, like the breathing, digesting and so on. Yes, all these functions are controlled by the primary functions of the central nervous system. Then the second part would be the conscious control aspects of your life where you walk, talk, move and do all kinds of things, from recreational to competitive. Then finally there is the third aspect of your life where you make things happen. These are your accomplishments - regardless of what others categorize them as. For you, your accomplishment may be climbing K2; or, for the next guy, his accomplishment may be giving up a pack of cigarettes a day. Whatever it is, the brain needs to get involved and say that it wants to do something that it is not yet doing.

Let's stop and think about that or a minute. You are asking a physical body to do something that it can't mimic. It is a phenomenal aspect of the human brain. You can't even get a computer to do that. Have you realized that yet? A computer, no matter how fast or how intelligent, can't try to know something that does not exist or thought of by a human. But you and I can. We call this the power of imagination and Albert Einstein is credited with his famous quote – "Imagination is better than knowledge." He is right. Without imagination, nothing you see in front of you today would be possible. You will only have the things that nature provided. There would be no computers, no cars, no airplanes. Well, you get the picture.

What has that to do with the topic at hand?

Imagination, researchers have found, is a function of memory. But to a greater part, it is the function of a brain that allows us to fathom what we see, find the nature of it and then, based on that nature we are able to come up with something completely new – that is imagination. Without memory, that would be impossible. The nature of this universe is built on an additive concept. Strings of energy make up larger matter of quarks, quarks make up protons and neutrons, protons and neutrons join with electrons to make up atoms, atoms combine to make up molecules. Molecules add up to make tissue, substances, and compounds. It is the nature of nature to reach for the next level constantly and it does so in incremental steps. You see that same pattern in evolution. The evolution of single-celled organisms out of virtually nothing and each layer is added on successively until we now have us and all that is around us.

In the same way, memories form and exist in additive patterns. Your full block of memories is perceived, processed, stored and recalled in a specific additive sequence that happens at a layer in our minds beneath the conscious frequency of our mind's operation.

We will advance that more in the chapters ahead. For now, we just need to know that it’s all additive, meaning that it is built one layer at a time. That building happens in silence. We started out a paragraph or two earlier talking about the bridge between memory and imagination. Because we are building a layer of understanding in our mind about the physical world around us, these layers are structured incrementally as well – as with the nature of all things. We form an affinity for something physical or something abstract in our minds by creating a physical connection (the creating of neurons) to represent one strand of an event and those connection build representing each element that we are observing. That, in turn, combines to become an understanding of whatever it is we are observing. The areas that we comprehend are rooted in our memory and based on that memory we create the next additive step – which we call imagination. Without memory, imagination cannot make the next conceptual leap.

The better your memory, the better your imagination. If you want to test this, commit to reading a book a day for the next 365 days. It doesn’t have to be something super heavy like quantum physics or nuclear chemistry. Just something that is based on fact or something that is fictional. Read this one book a day. A 40,000-word book should take you about 2 hours to read. Even without memorizing it, whatever that sticks in your head will change your thinking and the way you perceive. It will eventually change your life. One year from now, you will not be able to recognize yourself.

Can you imagine why this happens?

It is because the new knowledge that comes on in layers slowly changes the mind that supports it. Everything that you take in is added in layers and whatever the sequence that you supply it in those layers eventually changes the way you imagine the next step and that changes your desires. If you had to build a sort of pyramid of existence, it would be constructed with memories at the widest base, imagination in the middle and desires on top. Because the moment you have imagination, it creates a desire for you to convert that abstract imagination into physical reality. If you don’t have memory – none of this will happen. No understanding, no imagination, no desire.

So here is a trick that you can use to completely change your life. Remember we just talked about a book a day? Well, find 365 people of accomplishment across humanity’s history. Don’t worry about what it is they accomplished. That is not important at this point. Find 365 of them and then randomly read about one person every day. Commit that reading to memory.

What will happen is that you will start to form a body of memories that create imaginations of what the next possibility could be in your life, and that will spark a desire to reach for higher accomplishment. You will see that how far you go with that knowledge, will be a function of how strong your memory is. That is, essentially, why ultimately memory is such an important part of who we are and what we do. From a larger, philosophical perspective, it is also why history is an important part of who we are culturally and from the perspective of a species. Without memory, there is nothing to build on top of and we will literally be going around in circles. We would have no personality, no character, no desire, and no progress. But when we enhance our memory, we also enhance who we are and have clearer visions of our desires.

The quality of our memory is also crucial in who we become. If we chose to only remember the bad, then our future unfolds that was as well. If we only chose to remember the good, then our life becomes almost unrealistic. But if we chose to remember it all, then we start to have a very true perspective on things that happen. That degree of preference on what to remember is our innate character and it is the cause of who we eventually become. There are those who can clearly remember traumatic events and that stays front and center in their memory making it a prevalent feature in their psyche. On the other hand, some people are able to willfully put it out of their minds and chose to focus on something constructive. We can all chose what we remember. It takes a physical act and an intangible intention to chose what parts of our life and what parts of our desire we chose to invoke and keep active. The same goes with memorization and the daily aspect of our lives. You can choose to remember everything or nothing. Whether you are strong enough to remember everything is up to you.

When we remember everything, our emotions get in the way. Emotions, whether you realize it or not is a kind of memory as well. We just think of emotions as a visceral reaction to something. It is not only that. The reason emotions are a kind of memory is that without the association of elements of an event that trigger some form of emotion – fear, pleasure, and so on, we would not be able to consciously, or subconsciously remember the follow-on consequences of that event. Take PTSD for instance. One of the protocols for it is a drug that wipes out short-term memory. The moment you wipe out that short-term memory, the person is no longer affected by it. Do you see the power of memory? It can determine who you are and how you do in the future.

If you don't have the time to read a book a day, then at least pull together a number of quotes from some really accomplished people. Memorize a list of quotes from Bill Gates, Steve Jobs Socrates, Plato, and recite it every single day. Within a few months, you will be thinking differently and doing things differently. One thought affects the other and if you can change one thought for the better and then remember that, then change and other thought, and keep going, pretty soon, you would have changed the trajectory of your life for the better. It is as simple as that. That is the reason you are on this quest for better memory and faster recall. So, let's not kid ourselves there is a deeper reason you are here and whatever that is, the result is the same. You are going to change your life.

The things that will block you are the bad habits that we all tend to pick up along the way. Some bad habits affect the hardware that is in charge o memories and desires – an imagination, of course. Some bad habits reduce our physical strength, others erode our emotional and mental strength. Whatever it is, we need to make sure we are the absolute guardians of the habits that form in our selves. We need to be aware of what becomes a habit and we need to know what habits we can and should incorporate into our daily lives that will alter the trajectory of our current path.

Whatever that list eventually looks like, it needs to incorporate the elements that allow us to strengthen our memory and increase our imagination and desires to see that imagination materialize.

A great way to strengthen the mind and improve memory is to get used to being cognizant of what the mind is remembering and the imaginations that follow. And a good way of doing that is to practice mind-mapping. Now, for most of you who have used mind-mapping, you are probably wondering now why mind mapping is part of memorization. Understandable. Most of us are introduced to mind mapping with respect to brainstorming. We are also shown how mind-mapping creates branches of understanding. Each thing that we learn has many dimensions to it. Take for instance water. We know so many things about water, but we don't look at it holistically at any one point in time (why we don't do that I will get to in a minute) You see there is the chemical nature of water; the physical nature of water; the uses of water; and so much more. But at any point in time when we are in contact with water, the knowledge of it that is in the forefront is the momentary bias that our ancestors developed as they evolved (see Foreword) We only see what we need to, or what we want to see. When we drink, we see water as the ultimate thirst quencher, when we shower we see water for its cleaning properties, when we soak in a tub, we see water as a soothing relaxant. Water obviously doesn't change from one instance to the next, it is we who pay attention to only one of its aspects at any point in time.

Now comes the real question. Why is it we don't see water for all that it is at every point in time? That's because our real-time memory is limited as to what it can hold in an instant. For those of you who understand computers, let me draw a simple analogy – remember you can't take this analogy too far, otherwise, it breaks down and misrepresents the true nature of the brain, the mind, and the psyche.

In a computer there is a hard drive where every piece of data and every algorithm of applications and software is stored in different areas – this is non-volatile memory. It means that if you shut down the computer, you won't erase the memory. On the other hand, computers also have a kind of memory that lies in the foreground which is called RAM – Random Access Memory. The reason it works out this way is that RAM is expensive per unit of data stored compared to hard drives. And so, engineers had to prioritize and optimize. So instead of using RAM for the entire computer, which would be exorbitantly and prohibitively expensive, they opted to use the cheaper hard drive for the bulk of the memory and just brought what was needed to the foreground when it was necessary. It was an issue of resource allocation and resource consumption.

That's the same with the human central nervous system. When we evolved from vertebrates to mammals, we started developing systems that were a little more sophisticated than the original systems – but they were extremely resource-intensive. Even today, your brain needs copious amounts of energy to run and operate. For a simple existence, weighing at only 3 pounds, which is about 6% of your body mass, it consumes more than 20% of the total energy resources available to the body. When you live in a time where your next source of nutrition and energy is in question, spending more than 20% of your energy resources is expensive, and ultimately, species-threatening proposition. That is why our ancestors who were hunter-gatherers had smaller brains because food was scarce.

But the infrastructure is there and so is the capacity. You have the capacity to keep large amounts of data in your rapid access system and you have the ability for rapid recall of almost anything you desire. The question is if you have the energy to do it. But deciding to just eat more is not the solution. The quality of the energy and the pathways to it need to be considered as well. That is why memory improvement takes a little time and it is not all doable in one instant.

For the best long-term effects, we will step through the various methods in this book to develop and strengthen the infrastructure in different parts of your brain. From the emotional systems to the neuronal structure and event to the overall structure of the brain. We will also look at diets that you can supplement your lifestyle with to be able to give yourself the best quality and type of energy that will optimize the infrastructure of your memory.

In the end, it should become obvious that the quality of your life the level of your achievements, the nature of your relationships and the amount of peace and happiness you enjoy during your time on earth is directly proportional to the quality and quantum of your memory. And with that purpose, we embark on a quest to enhance and fortify our memory and all that that entails.

Chapter 1

The Neuroscience Behind Memory

Let’s start with the basics.

The brain, the mind, and the psyche are three concepts that confuse most of us into thinking that the terms are interchangeable and one means the other. I assure you, all are different, all are interdependent to a certain extent, and all behave uniquely over the course of our existence.

The brain is physical. If you were to approach it surgically, you will find that you could pick it up and it had physical presence. It had color, texture, and mass. The brain was just the apex of the central nervous system, which spread throughout the body. This system evolved from a very basic and rudimentary purpose over millions of years, to become what it is today.

In essence, the entire mechanism - the brain, the mind and the psyche are all interconnected in that they are tasked with doing one thing - and that is to fulfill the purpose of our earthly existence.

Most of us, over most of our individual lives, fail to realize that there is a distinct separation between thought, word, and deed. Deeds are the tangible actions that our body performs. The word, on the other hand, is partially tangible and stands at the juxtaposition of being a figment of thought and the reality of action. Finally, there is thought, while being very real to us is in fact intangible. All three are important and if one is not observant, one could

The brain is part of the central nervous system and sits inside the cranial vault. Every part of the brain is tangible and has a physical form. There are four kinds of cells that distinguish the brain, the neurons, and the other essential parts of the central nervous system.

The brain operates by using electrochemical signals and processes to accomplish its tasks of controlling the rest of the body’s functions. There are two main functions the CNS has to perform. First, it connects sensors to the brain. This connection allows the brain to get information from a host of sensors that the body houses. From temperature sensors to touch, to taste. Even sight and sound information are part of the information that is sent back to the brain along the nervous system. Once the data is in the brain, the brain decided on how to manipulate its surroundings to be able to accomplish what it needs to. Once this decision has been made, the signals are sent back to the peripheral tools in the body to convert thought to action.

For instance, a sensation of hunger sent to the brain could trigger a thought process that will direct the body to go in search of nourishment. In terms of hunger, there is more than just one trigger. In the case of hunger there is the real call for nutrition which creates a sensation of hunger, and then there is the habit of calling for food at a certain time of the day. Both are the result of neural pathways that have been created over time based on the actions that we subject ourselves to and the external lessons we learn of when is a good time to eat. The decision process to get to the point of foraging for food can be arrived in one of two pathways in this instance. There may be more. The point is that the same outcome can be reached along different paths of the neurons.

The Brain's Structure

The brain is three pounds of gray and white matter with the consistency of blancmange, a French custard. It is 75% water by weight and 60% fat by volume. It consumes about the same energy as a 20watt light bulb and uses 20% of the entire oxygen intake and also 20% of the blood flow passes through this area. To supply that much of blood there is approximately 100,000 miles of blood vessels involved in the supply and return to and from the brain. The brain is a resource hog, consuming more resources than any other organ in the body. The gray matter in the brain consists of neurons, and is about 40% of the brain, while the other 60% is white matter, consisting of dendrites and axons, responsible for the transmission of data. There are three functional areas of the brain, the cerebrum, cerebellum, and the brain stem.

The Cerebrum is the largest of the three areas and is divided further into lobes for organizational and observational ease. The four lobes are the frontal lobe, the parietal lobe, the temporal lobe and the occipital lobe.

The frontal lobe is responsible for a vast array of different human thought and action. It is a major part of motor function, memory, judgment, and impulse control. It is also responsible for social and sexual behavior.

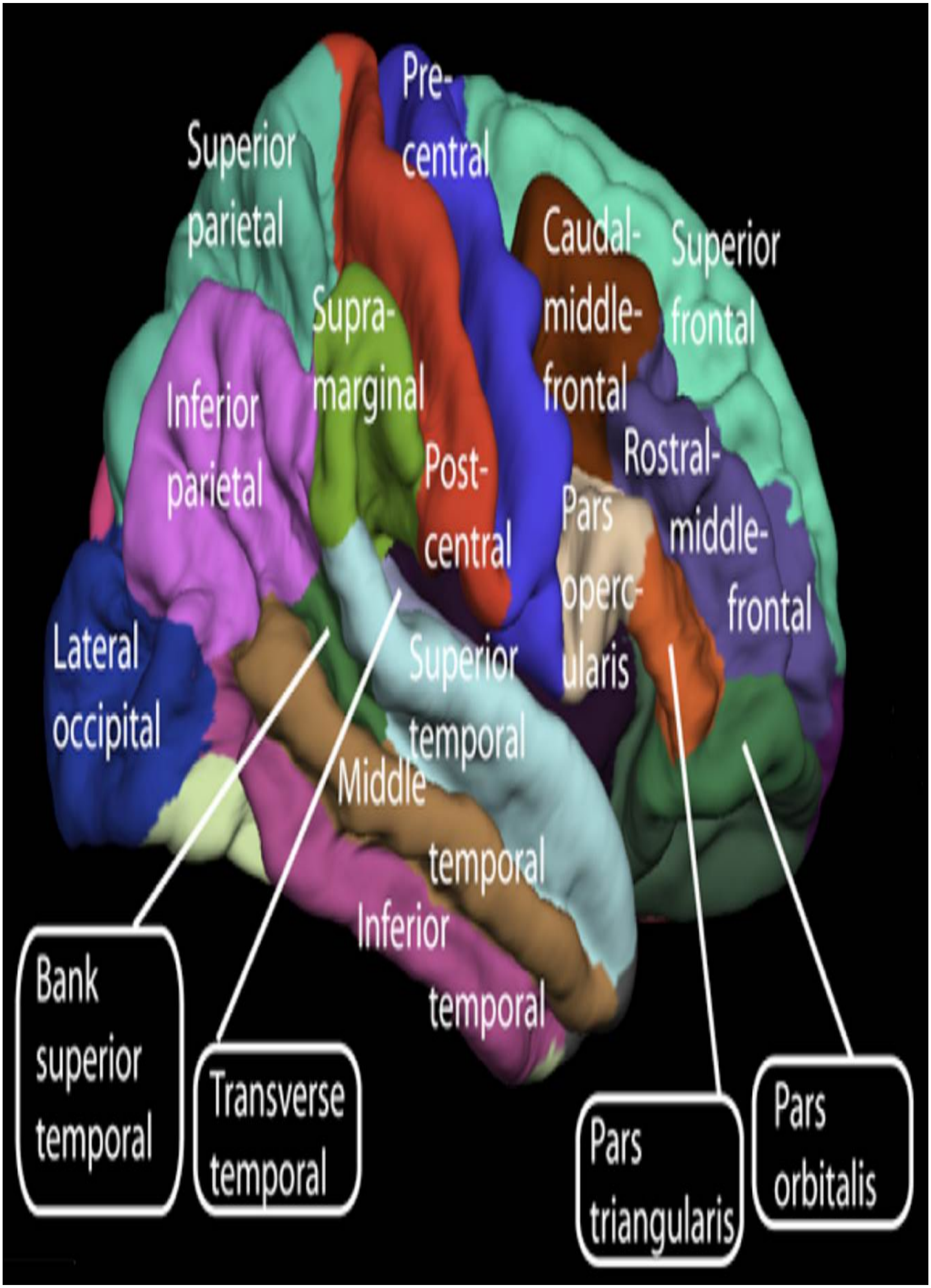
The parietal lobe is where the sensory information like touch and pressure is processed. It is also the place where taste is processed.

The temporal lobe holds the areas of hearing, long-term memory and the ability to recognize faces.

Finally, the occipital lobe is the area of sight.

These are just some of the important areas that have been listed. There are many more that would exceed the purpose of this book if we were to elaborate upon. Needless to say, that the lore that we only use less than ten percent of our brains is patently false.

To be more detailed, there are other areas of the brain that we can separate our study into it. There are specific areas of the brain that we know varying degrees of information but for the most part, science has a long way to go in objectively mapping our brain and understanding how it behaves. But for now, we need to know the following major areas to be conversant in the subject of neurology.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Cerebral Cortex. This part of the brain is instrumental in our ability to remember, pay attention and remain self aware. It is located on top of the cerebrum and made up of folded gray matter.

Corpus Callosum. The two hemispheres of the brain are connected by one bridge that allows data to flow between the two. This is the corpus callosum.

Ventricles. In the center of the brain mass is a pocket of cerebrospinal fluid. The fluid is found here, in the brain, and in the spinal column. It is produced by the choroid plexus, also located in the ventricles.

Thalamus. The thalamus is located alongside the ventricles in the center of the brain mass between the two hemispheres. It is responsible pain management and sensory detection.

Hypothalamus. Regulates the metabolic profile of the person and manages the autonomic functions of the nervous system and controls the activity of the pituitary indirectly controlling body temperature, thirst and hunger.

The brain's functions that have thus far been mapped by western medicine is strictly based on physical representation of cause and effect. This means that when they were mapping the brain they would test one are and see the effect of it and consequently map that function to that area. In each person the exact location of the control varies and each person has to be mapped for where a certain function is located exactly. The approximate area is what is known. The exact area has to be individually mapped if surgery is contemplated or using an MRI conducted with appropriate stimulation.

The Cells of the Brain

There are two broad classifications of cells in the brain and spinal column. The spinal column, although not considered the brain proper, is an extension of the brain in many ways. It is there to help transfer the information to and from the body to the brain. The two types of cells are the glial cells and the neurons.

The neurons in the brain are made up of three distinct sections. At the head are the dendrites that connect to other cells. The dendrites are like tentacles that branch out from one cell body that contains one nucleus. From this same cell body extends an Axon. This Axon can vary in length. At the of the axon there are axon terminals. Axons carry nerve signals to and from the cell body.

The glial cells are very different from the nerve cells of the neurons. The have no active part in the formation of cognition. Their only job is to keep everything in place. Glial cells amount to about 90% of the cells in the brain.

Everything you read above describes the physical elements of the brain. The mind, however, is altogether a different business. As much as we use both terms interchangeably, they do not mean the same thing in any way. The brain, as you saw, is a tangible organ that you can touch and feel. The mind however is intangible, and is more of a mental construct, than a physical object.

The mind uses memory and extrapolation (which can be referred to as imagination) to develop a kind of pseudo reality within our head. The mind uses algorithms that are based on occurrences in the real world and then extrapolated that to understand and predict an outcome.

What we retain in our brain, and the method in which we retain it are not exactly how we think it is. For instance what we see is not what we remember, rather, what we remember is an impression of what we see. That’s how it is for most people. For the rare few who remember things as they see it, they are referred to as ones who possess photographic memory.

The same goes for what we smell, and what we hear. It is all subject to interpretation before it is stored. This is true no matter how vehemently you believe that you remember things the exact way they occur.

However, photographic memory can be learned, and can be practiced. The real trick is not to possess photographic memory, which is on one side of the arc, or to have processed memory, which is on the other side of the arc. The trick is to have a healthy balance of both. This doesn’t meant that sometimes you chose to remember somethings on one way and other things in another way. What it is, in reality, is that you remember all things in raw and processed, but do saw to different degrees in two different phases of your brain. More on the phases of your brain in the next section.

Phases of the Brain

If you are wondering why we are still talking about the brain when we are supposed to be talking about the mind, well it's because the frequency, or the phases it crates, are very much a part of the mind. It's like radio frequencies. The frequency created by the brain is like that of the radio station creating the frequency so that it can place its programming on top of it. In the brain’s case, thoughts and emotions ride on top of the frequency that the brain creates.

In this section we are not referring to the stages of brain development. He brain is not divided into compartments based on physical separation like the hard drive of a computer. Instead it is based on different frequencies. The conscious and awakened state, the state that you are in now as you read this, is at a frequency that is relatively lower then you subconscious state. You subconscious state works at a much faster rate and can hold more.

To understand the brain, you must remember that your impressions of memory is a static one. You are unconsciously operating under the belief that you write your memory and it no longer mattes you are awake or not. That is untrue. One of the reasons your brain takes up such vast quantities of energy is because your brain is constantly serving it cells with the energy it needs to maintain cognitive functions. If you were to stop the blood flow to the brain for just three minutes, or deprive it from oxygen for the same amount of time what you will find is that the brain is the first to shut down.

The brain is no more static and passive than the heart that beats, and has been beating since before the brain formed in the womb, and will continue beating till the last breath. The brain on the other hand will continue to live until approximately three minutes of the heart stopping.

In that way, it's like the RAM in your computer. It is volatile memory - keeping what is stored only while power is supplied to it. The moment power is disengaged, everything is lost.

The brain operates on various frequencies as you can observe when it is attached to an electroencephalograph (EEG) . The neurons and cells that are in the brain are involved with the passing of electrical energy and in an EEG, that is the source of the image that is then produced. If a specific area of the brain is stimulated, then that part has more electrical activity and that is the area that lights up on the EEG.

What we consider as thoughts and what we consider as feelings are both just different wavelengths of the electricity that runs through the brain. Your subconscious happens at a much higher frequency, while you conscious occurs between a little over 0 Hz to about 500 Hz. That’s about all you can detect. Above that frequency and detection by your consciousness is fairly minimal, but you can feel it. If it goes higher than that, you wouldn’t even be able to feel it.

For instance all the things that are going on in your subconscious are happening at a much higher frequency. Different parts of the brain run at differing frequencies. To understand the better we look at the concept of brain waves.

Brain Waves

Depending on how deep you want to take it there are numerous wave categories. But for our purpose we will look at just six. These brainwaves are at times referred to as the speed of the brain and it is easy to fall into that trap. What brainwaves really are, instead, are the speed at which the electrical impulses pass in repetition thought one or a group of neurons.

For those of you who need a refresher in elementary science, frequencies are measured in hearts and it is count of the number of something that repeats itself in a prescribed unit of time. Hertz normally is the representation in seconds. So for instance, 60 cycles per second, or the repetition of sixty impulses in the span of one second, is said to be 60 Hertz.

The brain technically can’t do 0 Hz. And it can’t do negative Hertz, either. The slowest that has been recorded is at below 0.5 Hertz and even then it's a difficult process as detection becomes immensely problematic. The top end hasn’t been quite determined yet, although there is a theoretical limit at about 100Hz. All the measurement that happens extracranially is typically detecting the impulses that are happening in the cerebral cortex.

To visualize, imagine this: Take one neuron, from its cell body, across its axon and down to the axon terminals as a wire connected a switch. Imagine the myelin sheet to be the rubber insulation on that copper wire, and imagine the bulb at the other end of the wire as the dendrites.

Imagine if you were to turn that switch on and off once every second. An electrical impulse will flow through the wire and reach the bulb, illuminating it. If you increased the amount of times you flipped that switch on and off, the bulb would flash on at a faster rate. The faster rate corresponds to a higher frequency.

In the event there is no impulse at all, that is considered death.

Neuroscientists and psychologists have agreed on a number of bands of frequency. Ranging between just below 0.5Hz and 50Hz with rare but possible frequencies that have been thought to reach 200 Hz for those with intense meditation ability and those experiencing states of enlightenment. We have chose, as mentioned earlier, six classifications. In some medical circles there are more, and in some there are less.

Infra Low Waves

Occurs below 0.5 Hz (but greater than zero). This is rarely studied because of the lack of technology in detecting such low frequencies. However it is theorized to be a state in which the mind is at total rest and the frequency are the base impulses that form the networks.

Delta Waves

These are waves that occur between 0.5 and 3Hz. Unlike Infra Low, these are easily visualized in EEG tests and relate to periods of deep meditation. If you invoke these waves prior to learning and study, you will find that memory is easier. But do note, that it does not mean that learning in other frequencies are futile. On the contrary, learning is not just based on the frequency of the mind, it is based on the frequency of the input. If you match input frequency to the frequency of the cerebral cortex than you have a better absorption rate than you do when they are not in sync.

Theta Waves

These waves are measured between 3 and 8Hz. This is what you get in deep sleep and in some forms of deep meditation. Deeper meditation will put you in the Delta range. Once you are at this level (approaching from a faster cycle down to this, you are leaving the external world of bodily sensations to the environment and are able to focus completely internally.

Alpha Waves

Here the waves are measured between 8 and 12Hz. When you practice mindfulness, this is the state you will be in. It is a superior state to be creative and to allow ideas to flow. It is the ultimate definition of the here and now, and the thoughts that come to you in this state are highly imaginative and unless you are in the process of being creative, you should avoid those thoughts until your mindfulness exercise is over then go ahead and enter your creative phase.

Beta Waves

These waves are between 12 and 38Hz. At this frequency the brain consumes high quantities of energy, requiring constant replenishment of nourishment. But nourishment alone is insufficient as the brain also gets tired when operated at this frequency for too long and required rest or is faced with the risk of damage. Any stresses on the brain, including running it at Beta, should be done incrementally and allow the brain to get used to the operating speed, before sustaining that speed for too long. This is especially true for Beta and Gamma states.

Gamma Waves

Occurring between 38 and 42 Hz, these waves signify a state of heightened awareness. The brain is able to multi task and process input from various channels more efficiently and at a highly accurate state. The thing that conventional researchers find hard to reconcile is that this frequency is above the rate at which the neurons are thought to be able to fire. So the question that traditional neuroscientists pose concerns the alternate source of wave energy that drives this Gamma state. Some also believe that there is a case for spiritual awakening and super consciousness at this frequency.

As a student of neuroplasticity it is not important that you commit these frequencies to memory. They will come in handy but what you do need to understand that the underlying functionality of the brain comes from the oscillations of electrical energy that pulses through the neurons.

The Gamma state is really the highest state in which frequencies can go up to levels beyond 200 if really practiced meditation is undertaken. Contrary to popular belief, meditation is not the calming of the mind, that is mindfulness. Meditation is about the heightened focus of the mind. At the highest states of meditation ESP and large quantity data processing can occur.

It is also observed in meditators who achieve these high rates of brainwaves that they can experience time dilation. Time dilation is the mind's ability to interpret time. Without turning this book into a high level physics text, it is suffice to say that it has already been proven that time is unique to each of us. There is no such thing as common time. What you see on your watch is not time, it is man’s attempt to measure and quantify time, as well as commodotized time for the purpose of scheduling.

When you increase your brain waves out of the gamma range, what you will find is the brain’s ability to dilate time therefore fitting an entire hour, day, year or decade into mere seconds.

All this would not be possible if the neurons, or a bunch of neurons did not exist. Because, as you have already seen, it is the neurons that act as conduits for these electrical impulses.

Neurogenesis

As the name implies, genesis refers to the birth of something new. In this case it is the birth of new neuron cells. It has been observed in recent research that there is a special stem cell that is responsible for the birth of new neurons and that they occur in a special part of the brain. The regeneration of new neuronal cells is a lifelong process and in the event of new learning, new cells are formed on one part of the brain and then are moved to the location where it is needed.

In a way, neurogenesis is a subset of neuroplasticity from the perspective of, and only from the perspective of, adaptation after injury when exercised in a certain way.

In neurogenesis the brain responds to stimuli when prompted by learning a new skill or repeating a new skill and forms a new neuron which it then moves from its place of birth, which is in the frontal cortex, to the place where it is needed. As such in the event a stroke victim has damage in the area of the brain that is concerned with walking, assuming there is no other damage to the limb concerned and the ability to balance, then the process of neurogenesis creates new neurons with repeated practice and moves that neuron to the place in the brain that is appropriate for the ability to walk.

If the person is old, then the process take a significantly longer time and the recovery is slow to take shape and even after it does the relearned skill of walking is not as smooth or stable as the pre-stroke ability.

The new neurons are born where the neuron stems cells are located. In an adult human being that happens to be in the frontal cortex. Once the cell is born it needs to be installed in the location where it is needed. As such it needs to travel to that location.

There are two methods that the neurogenesis process employs in migrating the newly minted cell to its location. The first is the use of chemical signals. They are executed with the aid of Adhesion Molecules that are found on the new neuron and old neurons so that when they bind they move along the old neuron until the get to the location that they need to be at. The second method is similar or the first except this time they adhere to the radial glia instead of the neurons themselves and travel to their destination. Unlike previously hypothesized, neurons are not made on location which is one of the reason it takes time to learn new skills and when you do learn is, it's always a good strategy to let the newly learned knowledge sit for a while before attempting to use it.

It is interesting to note that only one in three new neurons arrive at their destination. Others get misplaced, and still others experience premature apoptosis. The misplaced neurons cause more havoc in the brain as they have been studied and found to be the cause of schizophrenia in some adults and epilepsy in kids. Dyslexia is also a common side effect of misplaced neurons.

Depending on where the neuron was intended to be placed, they will carry different functions. There are more than one kind of neuron. In fact there are three. There is the motor neuron, the sensory neuron or an inter-neuron.

Motor neurons are responsible for carrying impulses from the brain through the spinal column to the muscle group that is in question. The sensory neuron does the exact opposite, it carries sensory information from the extremities and sensors back to the brain for processing.

The third kind of neuron is the one that exist

Neuroapoptosis

Neuroapoptosis is the death of the neuronal cells in the brain and/or spinal column. Unlike the other cells in the rest of the body which have comparatively short lifespans which range from a few days in the stomach lining to two weeks with skin cells and 120 days for blood cells; neuronal cells last almost the entire lifetime. The bulk of the cells are produced in the womb before delivery and then a little more after birth. So cell death is usually at the point when the body dies. This is in normal circumstances.

However, neuroapoptosis can also happen under the influence of alcohol, asphyxia and brain injuries as we have mentioned. The thing to note at this point is not about how cells die, but how they are replaced. Unlike most other cells, brain cells are not replaced when they die. They are only born when new cells are needed to do new tasks.

As such, premature neuroapoptosis can be a significant problem especially in the wake of substance abuse because the cells are not automatically replaced and it is sometimes not known which function has been lost. But the nature of how skills and memories are formed, not all of the same skill keeps the neurons necessary for that skill in the same place, there are redundancies in other areas as well that the rest of the cells can lean on to get aid. But the difficulty is in knowing which skills need to be polished.

Memory and Neuroplasticity

Neurogenesis and neuroapoptosis are about the brain cell and its beginning. But neuroplasticity is about how neurons behave in their achievement of their purpose during their lifetime. Each neuron is connected to anywhere from a thousand to ten thousand other neurons, and there are about 100 billion neurons in total. That number stays fairly constant thought a person’s life, unless certain steps are taken during the fetal developmental stage. It has long been a lore that playing Mozart compositions for a fetus in the womb has this effect. For most of the children in a non-scientific study that was conducted where music was played for the full nine months of their pregnancy, it was observed (unscientifically) that the children who were exposed to classical music (not just ones composed by Mozart) had a definite effect. Ten years later the same group of children were observed to have moved further in academics and social engagement that study subjects who were not exposed to prenatal music and stimulation.

A single neuron is not much of use as when compared to that neuron connecting to thousands of other neurons. Their point of contact is called the synapse.

If you think about the brain, it is a physical, albeit a biological object. It is made up of live tissue, which are made up of no less than two different types of brain cells and is fed with oxygen and nutrient. The special thing about brain cells is that they are conductive in nature and they specifically transmit information electro-chemically. Dendrites bring information to the cell, which travels down the axon and out via the axon terminals.

A neuron in isolation only has one use - it holds a fragment of information in isolation and that present limited use without the benefit of the mind placing that information in context or without the imagination to use that information in conjunction without pieces of information. This is overcome when the neuron connects with another neuron that has another piece of information. In this same way each neuron connects to thousands of other neurons but that connection is not a physical one. There is a gap. This pretty ingenious actually. If the connection was seamless then there will just be information flowing allover the place and form a practical perspective that would mean a lot of the information would physically collide with one another and become vastly incoherent and thus useless.

Instead there is a gap between the neurons, specifically between the synapses. This gap acts as a boundary between one neuron and the next and in that gap neurotransmitters are used to go from one neuron to the next.

When an electrical impulse moves from the Soma to through the Axon and down to the terminus, it sparks of the release of vesicles that contain the neurotransmitters. These neurotransmitters then leave the axon terminus and jump the gap into the attached neuron. That neuron could be attached by the dendrite, the axon or the terminus of another neuron. Depending on where one neuron attached to another it gives rise to specific term - axodendritic synapse, axoaxonic synapse, and axosomatic synapse. Obviously the first terms is where the axon terminus is attached to the dendrites, the second is attached to the axon and the final one is where it is attached to the soma.

With this process in mind we can now begin to explore neuroplasticity and how to go about accelerating it and using it to our benefit.

It should be obvious by now that for any of the things we have spoken about up to this point, would be moot if the specific neuron or group of neurons were not functioning or effectively dead. It is possible to have thousands of neurons in the space of a red bean since each neuron can measure between 4 and 100 neurons. These neurons are supplied with a rich supply of oxygen and nutrients because the activities of the neurons take a up tremendous energy. In the event there is an injury and the affected area consists of parts of hundreds of neurons, the body would have to find a way of repairing it.

There are two ways of repairing it - one direct and the other indirect. The indirect method first. In the indirect method, whatever skill or memory that is lost with the death of that group of neurons can be re-learned and in that event it is possible that with significant effort expended the brain creates new neurons and sends it to his are. But this is not a direct replacement. The new neuron would go to the area of the old neuron but it would not have the same connections that the old neuron had. The new neuron would have to make up the connections that the old neuron had and that would take a lot of effort and time. But the important thing is that it can be done.

The second method is utilizes neuroplasticity. In the event of minor damage or in the event of minor degradation, the brain instead of creating new neurons makes use of the old one by just forming new connections in different locations. If there were three neurons, for instance, A, B C and D. And in this example A connects to B, which connects to C. D is not connected to anything here but to other neurons and is a replica of B. In the event B were to become defective or die, then the crux of neuroplasticity would be that A and C now form new synaptic connections to D.

It is also possible that entire neurons don’t get damaged. The only part that does get damaged is maybe a dendrite or two and possibly one of the axon terminals. In this case it is possible to lose a connection with another neuron and so new dendrites grow to make a new connection. This also a form of neuroplasticity.

The whole point of neuroplasticity is to be able to keep thoughts and functions in the brain intact in the event of two things. One, in the event that there is damage to the neuron. Second in the event you want to change an ingrained habit and override something that you have already learned. A good way to do this is to erase past connections and create new ones. This is the whole point of neuroplasticity.

The entire point of this book, that we have traveled across multi disciplines was to get to this specific point - how to change your brain to become a new person, better than the one you were yesterday and significantly better than the one you were a year, or even a decade ago.

When you understand neuroplasticity and you understand the underlying neuroscience behind it, what should be apparent and what should dawn on you i that you can be whomever you want to be because everything you are boils down to connections of synapses and the chain linking of neurons. And because of the new science of neuroplasticity we are now able to conclusively determine that it is entirely possible to change who we are from thoughts to mindsets to actions behaviors and actions. All of which are literally anchored in the chains of neurons and its liked synaptic connections.

All the processes we saw above are real but the key difference in what they are and what we want to do lie in the fact that the once we have seen so far are initiated by our subconscious in response to what it seems we need to evolve and thrive in this environment. However we, as conscious beings also want a say in what we want to become and how we want to be. There are still some aspects of the present that the subconscious is not able to handle entirely on its own because of its long standing links to historical and evolutionary forces

For instance one such archaic force is the fight flight or freeze response. We no longer are hunted by animals whose eyesight is primarily driven by movement. During times that we were the freeze response would be of aid in helping us hide from visual detection and from attracting the attention of the predator. We would also be able to play dead. Predators do not like dead prey, so they move on. But we no longer face that situation any more. So the fight, flight and freeze response does not need the freeze aspect of it and that is where the conscious brain comes in and tells us that we shouldn’t freeze and this desire to not do so slowly changes our brain in the process we have just learned to call neuroplasticity.

It turns out we can control this neuroplasticity. All we need is the knowledge of how to do it and the will to repeat the steps needed to get it done. In the next chapter we will lay out the steps you need to choose what you want to change in your life then get you brain in the mode that promotes neuroplasticity. It will take anywhere from 8 weeks to start to see the difference in your life. The more nimble your brain and the more plastic it is, the easier for it to create synapses with other neurons and this, as you will see in other parts of this book, is a major issue when it comes to memory by association.

You can’t just jump in and start messing with the neural connections and the synapses in your brain. If you do it this way, you would probably not have any success and in fact you may even be damaging what you already have. As with anything the first thing you need to do is understand the awesome power that is at your hands with what you are about to do here. The second thing is that you have to create the willpower to do the steps that you need to do to get to where you want to go and who you want to be.

The third is that you need to believe that what you are about to embark upon does have significant benefit for you, more so that what you have right now. The one thing that your subconscious is good at is calculating cost to benefit ratios and it knows that if you are about to embark on something that is less worthy compared to what you already have you will find your subconscious will be trying to sabotage you internally. It is one of the reasons many people fail at trying to elevate himself - because they do not believe in what they are doing and they do not have the facts to prove it to themselves. The currency between you conscious and your subconscious is desire and belief. If you have sufficient amounts of those, your subconscious will be on board.

With those three elements in our understanding it is time to layout the steps you need to accomplish to become a new person - someone who you chose to be.

Chapter 2

How Memories are Made

It was more than 16 years ago when the twin towers in Lower Manhattan were struck. Each of us, around the world, have individual memories of that day. For me, I can remember that it was a cool crisp Fall day, with clear blue skies - some of the clearest I can remember. I remember seeing the skyline across the Hudson Bay and I remember recalling the first news as it broke on the radio. I remember stopping everything I was doing and moving to the TV in such a hurry. I remember watching the reporter standing on a rooftop somewhere in Midtown with the burning tower in the distance behind him as a backdrop. I remember the close-up footage of the first tower in flames and seeing, to my absolute shock, the second plane strike the tower in real time. Millions of us were witness to that tragedy of this generation. But all our memories differ, ever so slightly, after all this time. We all do not remember the same thing. And we can't be expected to.

The one thing that we can expect is that the more catastrophic the event, the more it sears into our minds. How else can you recall the fact that it was a brilliant blue-skied morning? I even realize that ever since then, whenever I have a morning that feels the same – with clear blue skies and that specific nip in the air, my body gets a little shiver and the memory of 9/11 inevitably surfaces. I know there are events in your life that are similar.

I will give you an example of the clarity of memory that we all have, which shows what we are capable of. As part of the exercise, I will list out an event, and you just have to monitor whether you have the memory of where you were and what you were doing when you received the news.

- 9/11
- Challenger Explosion
- Pearl Harbor

- Hiroshima
- December 26, 2004, Indian Ocean Tsunami

What about these events cause you to remember them clearly. (You may not remember each event, or you may not be old enough to have directly experienced all of them) For the events that you did experience – which were widespread and the memory is seared into our collective memory, we can compare events and we will find that not all of us remember the same thing. Why? Is it because we are exaggerating, or because we are lying. No. It is because there are different kinds of memories and we store things differently depending on how we are introduced to them.

In fact, it is now scientific fact that the human mind cannot invoke a memory without altering it in some way. That alteration may not be drastic, but some of it will change. Which is why recording history is important and one of the reasons why a common habit among successful people is that they have journals. Journaling keeps the facts honest and do not allow the flexibility of the mind to alter them over time.

But what is it then that makes memories and why are the susceptible to changes. We saw in the earlier chapter that there are neurons in the brain that are part of the brain and the basis of memory. We saw the different parts of the brain and the fundamental stricture of it. Now let's look at the way those are sued in the construction and maintenance of memories.

Short Term Memories

Short term memories are a powerful defense and a credible ally in our mental and psychological health. Not everything we are exposed to should become a part of us and not everything we want to remember does us any long-term good. There is an opportunity cost to memories and brain function. When a memory turns from being something stored as a short-term memory it starts to create a fixed burden on the resources of the mind and if there are only a limited amount of resources then the brain has to choose. But a lot of people misunderstand this balance. They think that it is a zero-sum game. Well, it may be a zero-sum game as far as resources are concerned but the amount that the brain can remember is infinitely more than what the average person cares to remember or cares to focus on. So, don't worry, by increasing your memory power, you are not going to forget things that you already know. In fact, you will end up enhancing it.

Short term memories are ones that last for merely a few minutes. In fact, you can almost tell that you will 'forget' it in short order if you just paid attention to the event of the memory itself.

Just keep the fact that we never really forget anything, it's just how it is recalled that changes.

When we experience something, a chemical change occurs in our brain. That chemical change is location specific and it allows our mind to access everything that happens in the moment to be recorded there.

Think of it as you would a flight data recorder that is on a 90-minute loop. That just means there is a specific place on the place (usually in the tail cone) where a recording device records every piece of communication for the last 90 minutes. Whatever happens in the 91st minute is rewritten over the event that happened 91 minutes ago and so on it goes on a loop. The brain does the same so that it has a location-specific place in the brain to go to that is easy to locate. Once other things happen and the capacity of this short-term device is reached, it wipes the most distant and least impactful piece. In its place, it records the most recent event. If the event that is ongoing, like if you are in the midst of a catastrophic event, then the new event that is emerging will not take the place of the more significant event.

Here you can think of the brain from a functional perspective to be doing three things at once. The first thing it is doing in the background is that it is keeping all your operational protocols going. That means it is keeping you in homeostasis, maintaining your balance, your composure, and your metabolism. The second thing it is doing is recording the events that are happening around you into your short-term memory (I will relate to you how that is done a little below). Finally, your brain is keeping your safety systems and alert systems active. So, that in case you were suddenly placed in danger, that part of you will jump into action.

So with the three things going on, the brain needs a traffic controller. All the three things are going on independently of each other and without the traffic controller, nothing would make sense. Your memories would be incoherent as they would just be a jumble of all the things that are happening – and sometimes that happens which is why we have mistaken memories.

But as with all things, the mind is an organ that can be fortified and strengthened. With practice, you can learn to detect and keep your focus on one thing at a time or expand the capacity and bandwidth of your memory recording. Which is, in essence, the core purpose of this book. To become superior at memory retention and recall what we have to do is organize the traffic controller and realign our algorithm that says what goes where and at the same time enlarge the capacity for short-term memory.

By this point, I am sure that you already know that the brain makes connections in order to store memories. Memories are not just things that have happened to you and not just the things that you feel nostalgic about. Memory, from a neuroscientific perspective, is everything that you are. Not to belabor the point but everything you know - from recognizing the alphabet, the words you read, the meaning they have, your spouse’s name, your kid’s birthday, the way you walk, and the coffee habit you have are all recorded somewhere - that recording is a memory.

Most people just want to be able to remember their phone number when they say they want to be able to improve their memory. Some people just want to be able to remember things they read or events that happen in their lives. We will get to that. But before we open that box, we need to look at the basic neurochemistry of what happens when a memory is formed.

There are short-term memories and there are long-term memories. These are time-dependent memories. There are memories for functions, and there are memories for skills. These are operational memories. Then there are memories that are almost unreasonable and there are ones that eventually fade away - with varying time. These are impact driven memories. What is your intention? What memory are you interested in enhancing? All of it? Good, that’s why we are here.

The confusion arises when we think that all memories are formed in the same way or are made of the same fundamental elements.

Memory Encoding

The first step in memory formation is memory encoding. Think of it this way. If you take a camera and wish to capture an image, you look at the viewfinder or you look at the subject on your device's display and if that display is what you want you to take the picture. That's one way fo doing it. But really professional photographers, like the ones that capture wildlife images for National Geographic, for instance, do it differently, they point at the subject and they keep clicking. They take thousands of images.

When they get back to the studio or get back to camp, the go through each of the images and they look for the ones that are the most striking or the most pretty or the most aggressive – whatever their bias is at that point. (Remember we talked about bias earlier in the book). If this photographer as looking to capture the aggressive side of a lion's hunt then those are the bias that he brings to the process. These are the kinds of pictures that are going to be appealing to him at that time. That bias does not necessarily have to be the one something that is cognizant. And most often it is subconscious.

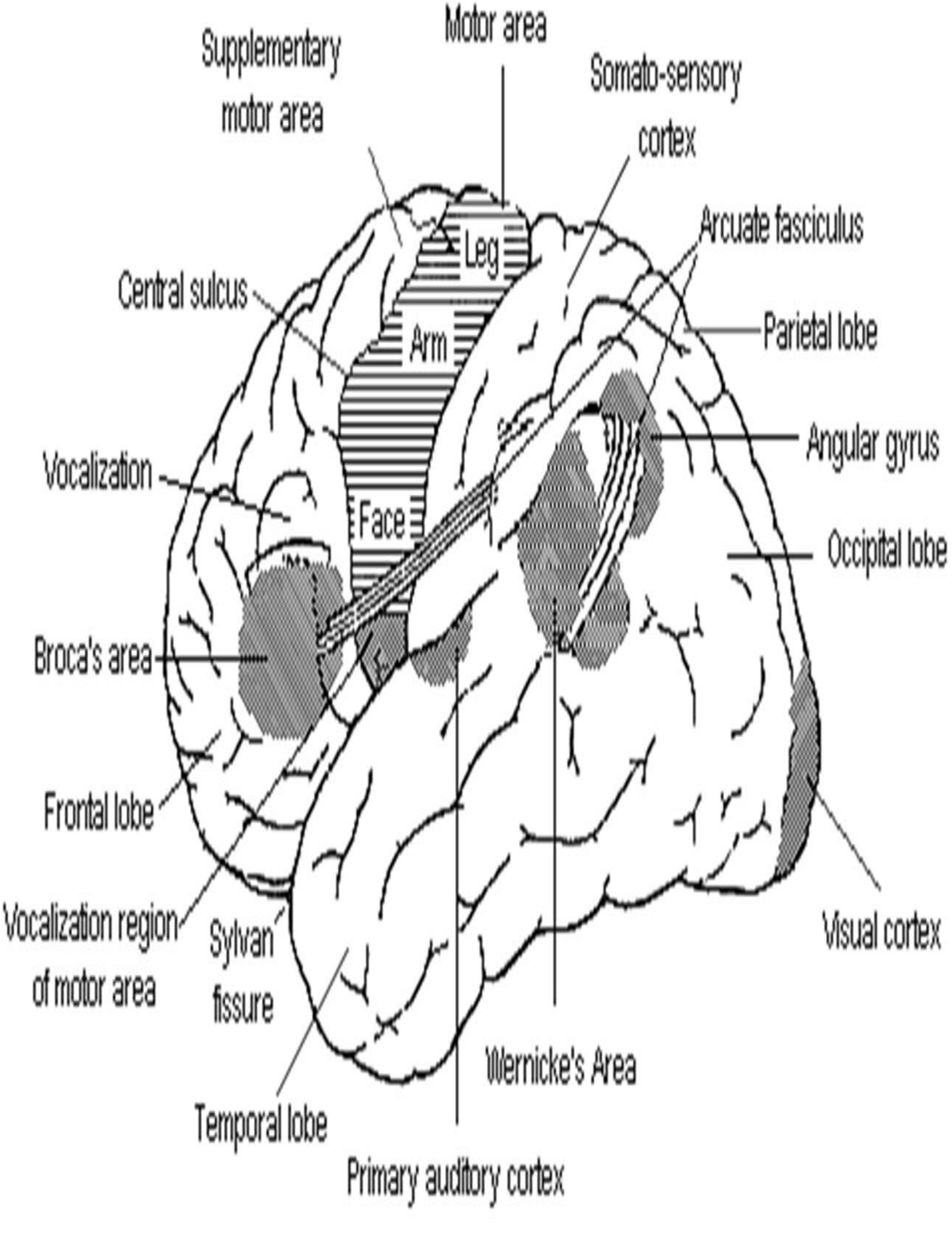
Coming back to memory. When you see something, you are not just seeing it. Seeing in relation to sensory inputs only refers to what your eyeballs sense and send to a part of your brain to decipher. Your ears are detecting it too, so is your nose and so are the tactile and touch sensors in your body. There are more than five senses, by the way. We just group them into five. Your sense of touch alone detects temperature as well as pressure to various. You sense different sorts of contact and even the hair on your skin is there to sense movement. Your ears sense more than a finite range of sound, They sense acceleration and movement as well. The also sense static pressure (think about the way your ears pop when ascending in an airplane). Your nose not only detects smell and odor, it also detects humidity in the air. Your mouth not only detects the five cardinal tastes – sweet, salty, spicy, bitter and sour – it detects the millions of other combinations of the five. It also detects texture and temperature. To a trained wine expert, he can tell you the acidity of the soil where the grapes were grown just by tasting the bottle of wine.

Every second of our life all our sensors are sending its recordings to different parts of the brain. For instance, information collected from vision is sent to the visual cortex in the occipital lobe (see diagram below); hearing is processed in the Primary Auditory Cortex; the impulses of smell go directly to the olfactory bulb. The olfactory bulb is located in the limbic system located in the ancient part. Once interpreted by the individual areas, they are then sent to the hippocampus where they are stitched together.

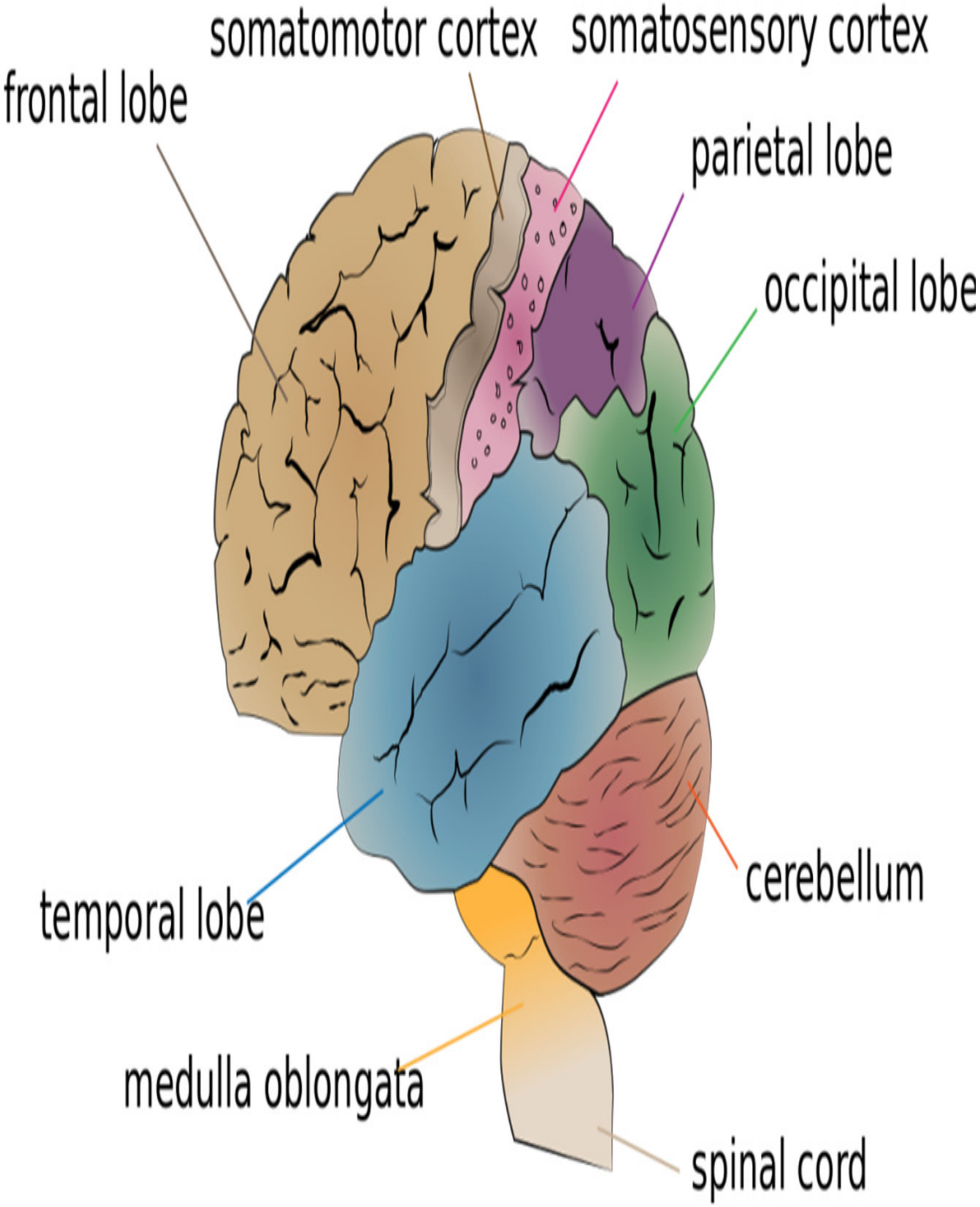
Break

Let's take a short but functional break from the science of the brain for a second and look a the wealth of information that is presented here in a way that we can use. It is essentially saying that what we think is one event is not really one event at all. It is really multiple events that are stitched together in the hippocampus. So if you recall the narrative earlier about the events of 9/11 you can see that different parts of the brain were involved in recording the event. For those of us who witnessed the events unfold.

It is the same way for everything that we remember. The brain takes all the pieces and stitches them as a seamstress would stitch together an heirloom quilt. It is a mosaic of events rather than one single event. You must understand your memory form this perspective. Every memory you have is not a single piece of a memory it is a multiple events that are composited into one. That is why each person's memory can differ because each person remember the same event differently based on how that event was stitched together.

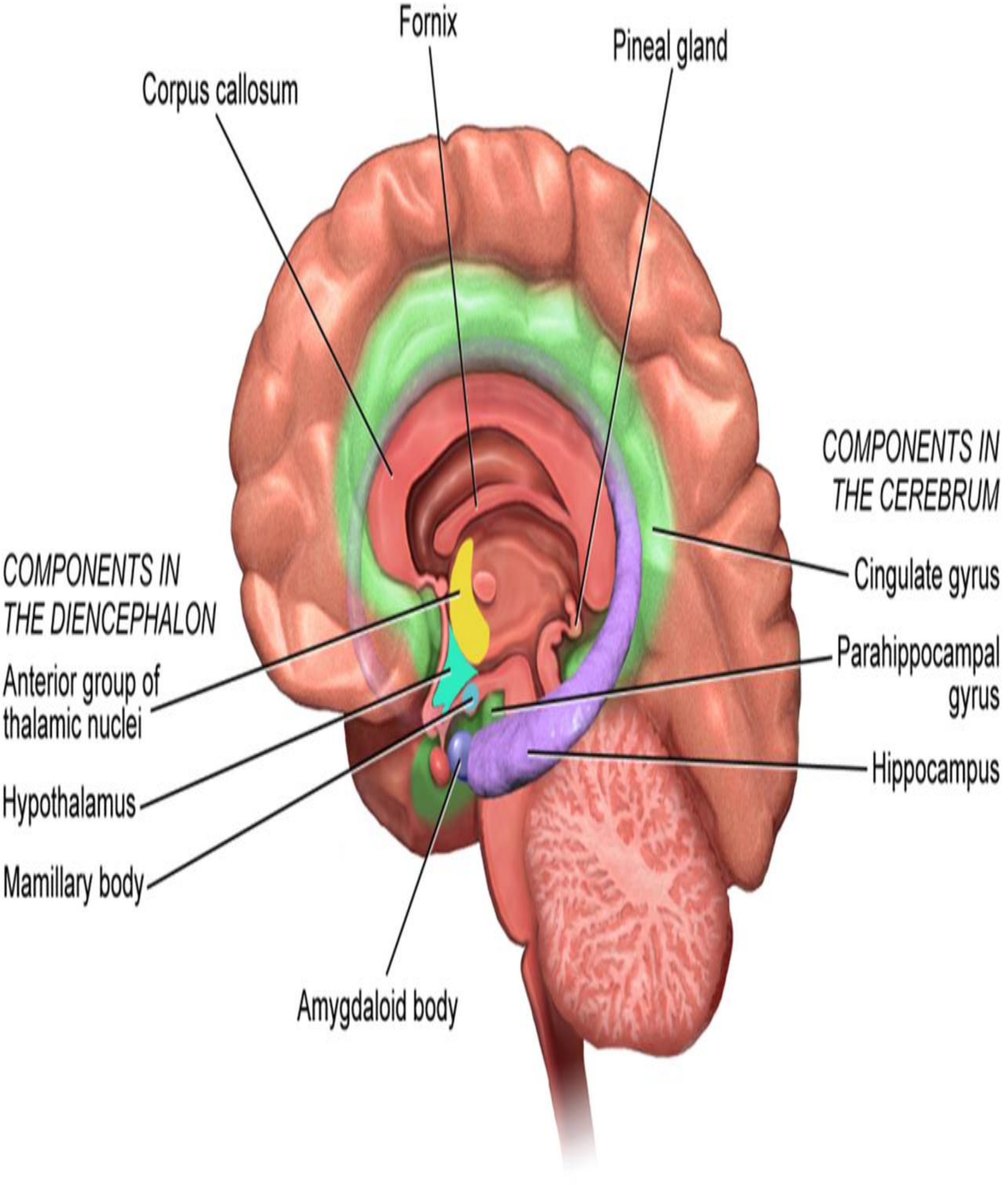


Motor area
Supplementary motor area
Somato-sensory cortex
Leg
Arcuate fasciculus
Central sulcus
Arm
Parietal lobe
Angular gyrus
Vocalization
Face
Occipital lobe
Broca's area
Frontal lobe
Vocalization region of motor area
Sylvan fissure
Visual cortex
Wernicke's Area
Temporal lobe
Primary auditory cortex


somatomotor cortex
somatosensory cortex
frontal lobe
parietal lobe
occipital lobe
temporal lobe
cerebellum
medulla oblongata
spinal cord

Blausen.com staff (2014). "Medical gallery of Blausen Medical 2014". WikiJournal of Medicine 1 (2). DOI:10.15347/wjm/2014.010. ISSN 2002-4436. - Own work, CC BY 3.0, https://commons.wikimedia.org/w/index.php?curid=31118604

The Limbic System



When the hippocampus receives the various pieces of data it is then the part of the brain that is in charge of stitching everything together. In some brain damage, this part of the brain is affected and patients have problems bringing their memories together in a meaningful way. Think of it this way. If you were filming a movie and the sound guy and the camera guy couldn't get their act together, when the two put the movie together, the sound would be just a microsecond behind the visuals. This will throw the entire movie off. The same if the hippocampus didn't stitch all the sensory inputs in the correct sequence. It is not as simple as just putting them together in temporal order – meaning whichever comes in sequence. You have to think about bandwidth and distance delay. Sensory inputs come to the brain in the form of electrical impulses.

What you see with your eyes are transmitted over a short distance from the front of your head where the eyes are, via the optic nerve and goes to the occipital lobe at the back fo your head, that is about 3-4 inches of travel distance. From there it is processed and sent over to the hippocampus. An event happening at the same time external to the body, let's say in your foot, will hit you visually in the eyes and travel a short distance to your occipital lobe, at the same time the electrical impulse that detects an event at your foots tactile sensors have to travel up your nerve and to you spin and up your spine and into your brain – its a much slower process than the light moving from the event to your eyes. When the two pieces of information reach the respective areas of the brain they get there at different times and when it arrives at the hippocampus they also arrive at different times. The hippocampus needs to sort it out and stitch it together subconsciously so that your conscious recollection is as close to what really happened.

The point in all this is that your memories are not direct photographic impressions of an event. They are a mosaic of different sensors that are brought together. There is still another step after that, where it needs to be considered for short or long-term memory. Many of the events that you consume are stored deep in the subconscious and are not readily available to you for recollection. But they are stored in areas that can be accessed especially by means of hypnosis.

When you say you would like to have a better memory, what you really mean is that you would like to have better powers of recall. For most intents and purposes your memory is just fine, but just in case we are going to teach you to do both. Because part of having a good memory is the ability to recall it at will, and part of being able to recall it is determining where it is stored for easier access, you need to be able to do two things for you to be able to have better recall powers.

These are the two main parts of storage and recovery. When you look at a computer – and I am mentioning this so that you can have something to associate this with. The first thing you see on a computer is that it has a hard drive and a RAM. You automatically know that the data is stored in the hard drive is harder to access – because it has more things to do to get it out, and the memory stored in RAM is easier to get because it is at the ready. You are right. But the one thing that many people forget is how the computer knows which piece of information is located at which location.

Before we even get to a memory and memory formation, you need to realize that there is a lot of space to keep a lot of things in your brain. Things can get lost in there and you will not be able to find them. So how does your brain keep itself from losing things? This is the genius of the brain.

The brain has two things that you need to know about that aids in recall. First, it has a little book that we can imagine, and we can call it a register. I remember in my graduate class, there were more than 200 students that attended lectures for this particular class and the professor insisted on calling on us for all kinds of questions and comments but he couldn't remember most of us so he would have a chart and he would force each of us to sit in class according to that chart. So he had a picture of each of us and a name at the bottom of it placed in the correct position. So, each time we wanted to call on a person he would look at that chart, find a face, find a name and look up in that direction and aim at his quarry with a question. That was his register. He knew exactly who was where. Your brain does the same thing. It knows where each location of a file is at any point in time.

So, when you want to recall a memory, it goes directly to that register and it finds out where that memory is and it goes and picks it up. So much for the visualization of that. But it serves as a theoretical way to visualize what might happen. Functionally, what happens is that it access a register of neurons that are linked together by association and the actual memory is connected to it by how we associate with it, and so the mind races through the entire filing system and finds the exact memory we are searching for until it finds it.

This is where memory aids get their efficacy. When you use memory aids you are literally walking a path through your mind from where you are to what you want to remember.

Until you realize that you have control over your thoughts, perceptions, and memories, it would be hard for you to also enhance your ability to recall. Because having control over your thoughts also dictates how and when your memories are written in your mind.

Here are two examples of why you are going about memorization al wring and why you can never seem to get your memory to recall what you need when you need it. The first part of it is that when you are in the midst of an event, your frame of mind of that event goes a long way in how you think about that event and there for how you associate that event. If you force a child to memorize their time's table and you make it really hard on them when they don’t, they combine the act of doing math with the feeling of displeasure and what you get is the hatred of math down the road.

In the same way, when you force yourself to memorize and you place an undue burden on yourself when you are unable to recall you will diminish any attempt to memorize, and in the future, it is actually met with resistance. You see, your mind is recording everything. It even records how you feel about the weather while you having a cup of tea. If you enjoy the weather while you are having that cup of tea, you will realize that in looking back on that event, the tea would most likely taste great too. Unless of course, the tea was so bad that it changed your bias and the event became more about the horrible tea than it did about the great weather.

Even in the formation of memories, our prevailing bias is a determinant of how we remember and how we recall. If you generally have a great childhood, all your memories from your childhood will be remembered with a form of nostalgia but if you had a lousy childhood even the memories that would be good will feel tainted.

When you put this together what neurologists have found is that your prevailing bias has a lot to do with how memories are stored and how memories are retrieved later. It's also how anxiety becomes part of who you are. For me, whenever I experience a bright, blue, cool morning, it sends a shiver down my spine because I instinctively recall the events of 9/11.

The key you need to remember is that the brain records everything and associates back to it. The moment there is something prevailing about that memory, that entire folder of associations is triggered.

I will give you a common phenomenon that most people who have attended their 25th high school reunion can attest to. When I went for my 25th reunion, the thing that caught me off guard was the fact I felt young again and felt like a teenager. It was originally inexplicable. But what was happening was that all those sensory inputs from seeing faces from a time when I used to feel and act a certain way, triggered the same notions and feelings and that changed the way I behaved. Even my wife told me that I was different during the event and it was a window into what I must have been like when I was in High School.

Not only did my brain record what I sensed in the outside word it also recorded how I behaved at that time and when all the visual cue presented itself, I became that person again. This is the power of memory and why you need to be in control of how you put your memory together and how you reinforce it – but that is another topic for another time.

So once you realize that your brain actually records everything then you may ask, why it is that you cannot remember everything. You can, just depends on how you access it.

Once the individual sensory cortex sends the data to the hippocampus in the back of the brain, it (the hippocampus) has the duty to figure out what to do with that data. It has three potential locations to record the event. By default, it records all memories in the subconscious. Regardless of how it was stitched together.

Then it has to make a split second decision to either place that memory in short-term storage where it is chemically encoded or to place it in long-term storage where it is constructed with neurons. If it is placed in short-term storage the chemical bonds that are formed to make the memory, organically erode and the memory will only last for a few moments to a few days. In that time if you do not provide evidence to the hippocampus that you need to access this for the long term, then what happens is that it totally allows the memory to erode and the resources are used elsewhere.

The thing you have to now keep in mind is that the memory is located in two theoretical locations. In the subconscious where it joins a pool of memories, and in the conscious where it is categorized and placed beneath active consciousness. When you try to recall something and it is in your memory but not something that you use daily, it may take a while for it to surface but if you access it on a daily basis, your memory serves it up in an instant.

When you are looking to enhance your memories, this is the second strategy that you can use to access the memories. The first one you would recall is when we talked about being conscious about where the memory is stored. The second one is to know how to access it efficiently in long-term memory.

Think of it as two sides of the same coin either be efficient in how you make the memory or be efficient in how you access it. Or the best opinion is to create a habit and lifestyle where you are adept at storage and you are fast to recall. In this way, you find that whatever happens to you, you are able to remember it for a long time to come.

The one thing that I have noticed among those who have very healthy memory and recall is that they do not have the penchant for worry. Regardless of what the memory is, they are able to take everything in stride. This is something you need to learn as well because one of the ways the mind protects you is that it shields you from memories that are painful and you seem to forget them. They are actually still inside you and one day you may remember them in a dream or by association or something may trigger that memory. But whatever it is that memory is not totally discarded. What you have to do is learn how to be ok with all kinds of memories. When you do that you will find that you are better at remembering.

Once the data arrives in the hippocampus, a large number of cortical synapses, called the neural network set about connecting the individual memory to the various prerecorded memories by association.

You have faced this plenty of times. When you see something and it triggers a memory of something else. Until today, when I detect Channel No5 in the air, I instantly picture my mother in the room. It was the perfume she would use every time she went out and I grew up becoming extremely familiar with that bouquet. Each time my mind recorded the memory of what was happening around me, it must have been recording my olfactory sensations as well and that was part of many of my memories. Last week when my family and I were at the theater, a lady using the same perfume walked passed us and instantly it triggered memories of my mother. I am sure you have the same experience with some objects as well.

During the process of encoding, the mind relies upon four sets of processes to accomplish its task. These are the acoustic codices, visual codices, tactile codices and semantic. The first three are primary and the last one is built on the first three. Semantic codices are something that was not originally part of our evolution and it has only become a part of us over the course of the last hundred thousand years. It shows that our brain is indeed getting more sophisticated and that our ability to use it Is also rapidly improving.

Acoustic encoding takes all that we hear, from the raw sounds of vehicles and jet planes to the sounds of words and meanings and constantly evolves as to tones and mannerisms throughout the course of our life. There are no set codices and there are no set processes. The process is constantly changing and they change more so during the younger days of our lives than they do during the older days. This is not because of any biological irregularities when we get older but because there is also a ready mountain of data that suggests one association value that we are not inclined to change it until there is a correspondingly large mountain of data that demands the change.

Certainly, as age catches on the amount of energy that is used by the brain, or rather that is shuttled to the brain for this process are reduced and sent to other parts of the body of repair and maintenance, and so the mind which is heavily energy dependent starts to alter.

You must remember that the mind’s processes are all volatile. They need energy, in the form of electricity and chemicals, to keep the memories from degrading. Without the essential energy, these memories begin to fade and we see it as forgetting.

When a memory is made, a record of it is kept, but because of energy economics and certain things are let go, we tend to allow the connections in the memory to fade and to erode, that is why we know we used to know something but we now forget. It is also because there are a number of associative neurons that attach to one memory and attach it to the other neurons that one neuron degrades, we know that it's supposed to be there but when it is not we feel the discomfort to memory loss.

It is not the same thing as forgetting where your keys are kept. When you forget where you put your keys, the memory actually went straight to your subconscious and was never part of your long-term or short-term memory. It started in the hippocampus and went to your subconscious because you were not paying attention. If you pay attention then the minds understand that something is important and it will enter the location of the memory in its register and store that memory in the conscious side of the brain.

If you just hold on to your keys and you then just put it somewhere while you are on the phone or in the middle of a conversation, the various memories that are being created in that event get prioritized and the one that you are paying attention to gets stored above the line and everything else gets stored below the line.

So pay attention. Here is one of the simplest lessons of the book – more will come in the latter half. But for now, remember this. If you want to remember something the first thing you have to do is pay attention to it. If you do not pay attention to it there are only two ways that you will recall it. One is by chance the other is by hypnosis.

Paying attention to what you are doing is normally not always possible especially in this world of multitasking. Multitasking has become so prevalent in today’s world that we do it without thought. In the event we are driving, we spend much of the time texting or talking on the phone – both of which are not good for the pedestrian and for our own mental health.

In the event we are forced to multitask, our memories are recorded but we will find it hard to know if we have done then or otherwise. For instance, when we are on the phone and we are locking the door and turning out the lights on our way out, we will find that after some time and a little distance away, we find that we don't remember if we locked the door or turned off the lights. I have been a victim of this my self and what happens s that we end up making the drive back to make sure or calling someone to check for us.

All this would not be necessary if we just paid attention. This is just a small issue that I bring up but it goes to the crux of this chapter. You are concerned with the act and process of making memories and your mind will go in and record all that it sees around it but it will only record effectively the memories of the things that it know you are doing mindfully and in full awareness.

So the first thing you want to do in your effort to remember more and to improve your memory is to stop multitasking and to pay attention to each activity that you are doing. You will instantly see a huge improvement in your memory ability. This improvement is not just in the thing that you are paying attention to but it will also have a spillover effect in the other areas of your life.

The size of your temporary memory or the ones that your hippocampus uses to place short-term memory depends on how much you use it. If you use a little of it, it will only keep a little space. If you use a lot of it, it will enlarge the space. It is just like the muscles in your arm. If you use them and pump them up, they will grow. The body knows how to build you up if you are using your assets. If you don't use it, the body is very economically efficient and it will stop sending resources to it and it will divert resources elsewhere. However big you build your biceps, the moment you stop working them out, they start the process of atrophy. Try it. Go to the gym for the next month and see how quickly your biceps build up. Then stop going for a moment and see how quickly it leaves.

The same with your brain if you use your brain to memorize things on a daily basis you will notice that you are able to store more and more things in short-term memory that you are able to recollect at a greater pace. If on the other hand, you are constantly relying on your phone to dial numbers and using your voice command to extract the number there is little chance that you are going to be able to remember any phone number. Even the ones that you call constantly.

A major step in building your memory is to build your capacity to remember short-term items and for that, you start with paying attention and the second is that you make it a point to remember two kinds of content. The first is to remember numbers, and the other is to remember paragraphs of text. Both numbers and text can be related in two ways to your brain. Whether from the visual cortex or the auditory cortex depending on how you are used to learning. For instance, some people are better at retaining data when they hear it, and some people are better at retaining data when they see it. Which you prefer tells a lot about how your mind is better at making the associative neurons.

Remember we talked about four processes, the visual, the acoustic, the semantic and the tactile encoding processes. It turns out that each of these processes is favored by the hippocampus with a bias that depends on which cortex the data was originally received from. The short-term memory is typically acoustic. So, what you hear actually has lesser long-term bias and what you read – semantic encoding has longer memory. That's one of the reasons why advertisements with bullet points have such a great impact – for both its brevity and its preference for semantic encoding in the long-term memory.

If you want to remember it for a longer period of time, you are better to write it down and then read it. Or just read it actively while paying attention. It is also known that when you rhyme a sentence, the melody of it allows the semantic encoding to be stronger and it lasts longer. Things that are poetic in sound and rhyming in presentation, seem to have a lot more credibility because the brain encodes it deeper and allocates it greater weight thereby giving the mind a sense of credibility.

If you want to keep your memory powers strong, your first step is to keep your energy available for brain function up. You can do this by keeping good circulation and allowing your mind to get plenty of oxygen and long-chain sugars. (Think bananas and oatmeal)

When the brain gets sufficient energy it doesn’t have to rely on energy economics to decide which part of you gets the most energy. In most cases the energy requirement is satisfied when the body doesn’t have to focus on fixing itself so often, But when a person gets older, there is a lot of wear and tear in the system that is not being replaced due to a lack of the Hgh (Human Growth hormone)reduction with age. It is also the same reason why kids have better minds and more alert responses.

If you want to place yourself on a path to better memory, feed your brain the right food and make sure you stay away from habits that damage it, or your body. The more energy your body spends repairing itself, the less it can spend on keeping memories at the surface and accessible.

Photographic Memory

There is a romantic interest in photographic memory that is unfounded. It’s not that it does not exist, it does. It’s that there is a lot that needs to be invested in this before you can harvest it s utility. Bill Gates is credited to having photographic memory. What does that actually mean? Does that meant that you see something and that you remember every last detail in picture form? Yes and no. First of it depends what kind of memory you have. If you are the kinds of person that is more attuned to acoustic memory then you can remember every note of a sonata the way Beethoven and Mozart can. They can play entire symphonies in their head because they have superior acoustic encoding. On the other hand someone like Bill Gates has superior semantic encoding.

But all photographic memory starts with its location in the short term areas of the brain and it is then moved to the long term memory or to the subconscious. We all do have photographic memory, actually. You do, and so do I. The difference is that your photographic memory is stored in your subconscious. While others like Beethoven, Mozart and Bill Gates have it stored in the more accessible part of their conscious brain.

The point that you have to carry with you then, ti sthat you already record everything, you just need to increase your ability of recalling it and to do that we take advantage o three strategies. The first is that we make sure that the hippocampus records it in the best place for retrieval and that we make a record of its location.

In a hard drive on you computer there is such a thing called the registry. We introduced this concept earlier on. The difference between the registry in the hard drive and the registry in your brain is that the infrastructure is a little different although the concept is the same.

In the computer there is a list of filenames and the corresponding hard drive location. If you go to your word processing app and create a file, the computer will register where it is stored that file in the hard drive. The funny thing is that if you decide to move the file from one folder to the next, the computer will show that the location is now in the new folder, but the actual, physical location of the bits of ones and zeros is still in the exact same spot on the hard drive. The only thing that had changed would be the location from where the files is called from , and that is kept in the register. The same thing happens when you delete a file. It doesn't actually erase all the ones and zeros, what it does is remove the entry in the registry.

Now let us compare that with the working of the brain. There are some similarities but there are also some vast differences. The reason we explain this here is so that when you reflect on how you want to improve your habits of memorization, you can take this into consideration and that will give you a tremendous amount of working efficacy.

When the sensors deliver their signals to the respective cortex in the brain and the cortex translates that to the hippocampus, remember they come in fragments. An explosion far away would register a sound, the sight of light and smoke, and your tactile senses may or may not detect the heat from the blast, but it will certainly record the temperature of your surrounding environment. Once that gets to the hippocampus, it then instantly stores a copy of it in your subconscious and decides where to store it consequently – in the short term memory or long term memory. How it stores it is a function of a number of factors. If you are well nourished and have lots f energy to spare the hippocampus would chose to place it in long term memory. It is a game of balance.

To store it in long term memory requires that it create new neurons and then attache it forward and backward by association. For this it needs sleep – I will come to that in a moment. On the other hand, if it determines that it will store it in short-term memory, then it will just create a chemical-based memory. These kinds of chemical-based memory fragments have a finite life and will quickly erode - anywhere between a few seconds to a few days – unless something more permanent is done.

If you spend the day going about your business and you sit down at the end of the day to reflect on all the things that happened to you, then there is a good chance that you can get that short term memory to be written, instead, in long term structures. If you don't, then it will remain in short term memory and eventually die off unless it was such a devastating event and an event that made an impression on you. The hippocampus is not quick to discard memories especially if it thinks that the memory can be of use to you in the future. So it prioritizes all events accordingly. But because it doesn't have a strict algorithm, it uses its own past experience to manage that system of memories. This is really what you call a mindset. All those people who have tried to explain the mindset to you come up short because they do not really address the way the hippocampus works and how your memory is stored. Because without memory there is no character, there is no mindset and there is no existence.

Take Away

What you need to understand in the grand scheme of things is that everything that you feel, everything that you encounter, all the experiences, whether its in the classroom, in the living room, on line or in person – it is all recorded. Even the most intimate thoughts that you advance and indulge in is recorded and stored within you. What you have to know is that one's desire about superior memory is about superior recall not about about enhanced recording. Its about where you locate the memory not how you memorize it; and its about lifestyle habits and not merely magical potions and rituals.

You already have the most profound memory of all the species that have evolved, this is a proven fact. What you will learn from this chapter onward is how to store it and how to retrieve it.

Chapter 3

Eidetic Memory

I’d like to cover a concept that has been around for quite some time now and it is called eidetic memory. This is similar to photographic memory except photographic memory is about perfect recall of an incident whereas eidetic memory is about perfect recall of an image. The distinction between the two is not really important unless you are the kind of person that is able to do one and not the other.

If you are able to do one and not the other, we will show you how to do both. If you are unable to do either, we will show you how simple it is to actually accomplish them.

If you remember in the previous chapter we talked about encoding and processes that are done by the four different encoding process – the visual encoding, semantic coding, tactile coding and so on. When you read something you will recall that it was processed with semantic encoding and the hippocampus favors the semantic coding. This also has to do with the frequency and flow of the information that arrives in this hippocampus when you read. However, when you see a picture, you are automatically using the visual encoding process.

So, if you want to have photographic memory the question is not about forcing yourself to stare at pictures longer. It is about altering two things.

1. The encoding processed

2. The preference of the encoding process

What this means is that you first have to allow your mind the time it needs to complete the encoding of the image and then you have to get your hippocampus to train itself to raise the value of the visual input. By default for most people, the priority is not the visual encoding by the semantic encoding. But you can change that.

Think about it this way. If you go to a club early and there aren't many people there yet, the bouncer is going to let almost everyone in but he has a limitation as to how many he can let it at any one time because the door can only take one person on at a time. So if there are a hundred people waiting outside and there is place for seventy, he will let one person in at a time, not more. But when he gets to seventy, he will stop the seventy-first person, until a patron who is already inside decides to leave and so the next person can go it. Now hold that thought in your head.

Look at your brain. There are actually so many things that are entering your system right now. As you read this book, you may not be paying attention to it, but there could be a dog barking in the distance, a car honking around the corner, a siren wailing across the main street two blocks away. There could be a clock chiming in the kitchen, someone snoring in the apartment upstairs. You can't hear any of them because you are not paying attention to it but they are all being recorded. However, what you are paying attention to is competing whether it should be stored – chemical storage (where it will be discarded in a few days) or electrochemical storage that will have a longer residence in your mind.

The hippocampus has to decide. It decides that all the noises in the background that you are not paying attention to are placed outside the grasp of your thoughts since you don't really need it. But the things that you are paying attention to need to compete for preference when the capacity is limited.

There are two ways for you to increase this capacity. The fist is that you increase your overall health by working out more and increasing your immune system. This allows your body to keep itself free from energy-draining illnesses. If there is nothing taking up your energy, then there will be more energy and more resources for your brain to be able to record more neurons and so it is more willing to keep more items in long-term memory.

The second thing that you need is the priority that the hippocampus needs to understand on who is best in the short term and what is best in the long term. Once again that is the function of your need and mindset. If you are the kind of person that looks back on everything then your mind will make sure that it keeps everything in long-term memory. If you are the kind of person that doesn't return to your memories for analysis, then your mind will push everything to short-term memory and they will be eroded over time to make way for other short-term matters.

So what you have to do aside from keeping yourself healthy and keeping your immune system up is to supply your body with the tools, energy, and enzymes that promote the building of neurons. The second thing you need is adequate sleep so that you are able to make those memories last longer.

Here we will come back to the matter of sleep that I told you earlier we will return to.

When we sleep the hippocampus can relieve itself from the recording activities and take on its second duty which is to find the final place for the memories that it has taken during the day. There are three parts to this.

The first is that it has to determine what is relevant and what is not. What is not relevant will be placed in the subconscious area – which is more than 99% of all the things it records. Then it has to determine what is of focus and importance to you. If it knows what is of focus and importance to you it places that in long-term memory and it also creates associative links between all its other memories. While you sleep, the brain is fully awake and doing all the things it needs to get you ready for tomorrow.

This is where you get to determine if you want photographic memory, eidetic memory, or both. I'd chose both if I were you because you have the option to do so. As long as you keep your nutrition healthy and you keep yourself free from bad habits. We will talk about bad habits in a later chapter. Please pay serious attention to this because it has a significant impact on how you recall your memories and how you record them. All the effort you put into enhancing your memories will be in vain if you do not find and abolish your bad habits.

If you chose to have both then what you have to do is indicate to your hippocampus that you chose to have photographic memory. You can't tell it that by talking to it and you can't phone it in. You have to do it by consistently wanting it and desiring it in a way that it becomes evident that you are in pursuit of it. Your mind will oblige. How do you do that from a practical sense?

You start by practicing. You have three kinds of exercises that you can do. The first is to look at a picture rapidly – like the use of flashcards and cycle through each image, spending no longer than 0.25 seconds per image. Not to worry you may not be able to consciously discern it but your mind will catch on to it.

Let me tell you a story about rapid pictures. Some years ago a popular soda manufacturer experimented with advertising by interlacing the movie in the theater with one frame for every eight frames of movie. Let me back up here. In those days, there were no digital movies that came on laser or compact discs. They came in reels of film. On this film were frames of images and when you rapidly flashed each frame in succession, what the viewer saw was a moving image. The viewer couldn't consciously absorb each image individually because it was moving so fast but it still registered in their minds. What the soda company did was place one frame in every eight frames of the movie with their brand logo.

No one in the theater reported seeing it explicitly. However, there was a significant increase in the number of people who got to the concession stand during intermission to buy that brand. Advertisers call it subliminal persuasion.

That fact was just something I wanted to share with you so that you understand that everything that goes into your mind does make an impression. It's only a matter of whether you are conscious of it or you are oblivious to it. Either way, it doesn't matter, it still gets in. But if you want to have rapid photographic and eidetic memory then you start with this flashcard exercises.

When you rapidly flash the cards with different images, you should do it once then close your eyes and keep it free from all thought. Then attempt to spontaneously describe each photo as quickly as you can. I have seen this done with kids and the results are amazing because kids have a clean slate to work with and the method is significantly effective.

But do not do this with the electronic flashcard apps that I've seen online. They tend to induce spasms and nausea. Its one thing to flashcards, but it is another thing to flashlights. So please stick to the flashcards.

Start with black and white pictures for high contrast and then continue with color pictures. Do this every day. But don't just flash the cards, but also sit down later and spend at least 20 minutes recalling them. You must be totally desirous of total recall so that your hippocampus gets the message that you intended to remember the flashcards.

The next exercise you can do is to take poetry – ones that are formatted as iambic pentameters are best. Iambic pentameter is about the rhythm and rhyme of the poetry and many of Shakespeare's poems are such. One of the best books you can get to aid you in memorization would be Shakespeare's Sonnets. You can get those free off the Internet. If you use those as your starting lesson. Along with the flashcards for the eidetic memory, you will make the most progress.

These are just the initial exercises you can do for photographic memory and eidetic memory. If you notice one is to prioritize the visual cortex input – by means of its encoding; and the other is to advance the semantic encoding. These two alone would take you a long way on what you remember and how you remember it. You will be surprised that practicing memorization will cause you to lose weight. So if you feel like you are in the mood to lose weight – this is a great way to do it If you do start shedding the pounds you will know that you are on the right track.

Chapter 4

Creative Thinking and Visualization

For those of you who understand visualization, you will realize that a lot of what we have been talking about in the last chapter can easily be achieved by visualizing everything that you do. Yes, that is, in fact, possible and in this chapter we will look at the tips and strategies to use visualization and creative thinking to advance your memorization prowess.

There are two kinds of visualization techniques the first is the kinds that you do before undertaking a task. That sort of visualization is beyond the scope of this book so I am not going to go too deep into it except to tell you that when you visualize something it ends up being something easily accomplished - compared to doing it without visualizing it.

But for the sake of memorization, visualization is not a prospective act, its done after the fact. So lets say you just went through an experience and as soon as its done, you take a moment to recount the event – and it doesn't have to be the whole event in detail – you just need to recount the salient parts of it, and that instantly signals to your hippocampus that that particular memory is best placed in long-term memory.

The one thing that I did not mention in the earlier chapter but saved it for now because it will be in better context here is that there are two kinds of strengthening of memories in the long-term area. If you recall long-term memories are stored as electrochemical bonds – in terms of neurons that connect to other neurons. Typically those connections are really how one neuron associates with another. So for instance, if you described a black shoe – your mind will link that memory to all the things that are linked to black and all the things that are linked to shoes. So in the event, you look up that memory you will find it associated with all kinds of things that are either linked to black or linked to shoe or linked to other black shoes. In other words if you pull up the memory of a red show, it could trigger a memory of this black show, or if you looked up a memory of rubber shoe, you should trigger this black shoe as well.

You have seen this in action so many time especially when you were a kid playing word association games.

More bonds it makes and the more connections one memory makes with others, the stronger that memory becomes. But you must recall that each association that goes from one neuron to the next is an expenditure in energy and resources and the mind does not take things lightly. When you look at poverty levels in some impoverished areas, what you will immediately notice is that children who are malnourished – that means it is not just calories, but also proper nourishment to help grow, create enzymes, vitamins and boost the immune system, - all of these are diminished when there is a shortage of caloric and nutritional intake. You will see in these areas that academic achievement is also lacking because as much as these kids try, they are just not able to make the necessary cerebral bonds to make let them remember what they learn in school.

If you want to keep your wits about you and want to supercharge your memory, you have to make sure that you are paying attention to your diet and you are working out your body, in addition to working out your mind. Working our your body frees up your mind to expend resources to making memories and associations in your mind.

Back to visualization. As we said there are two ends of visualization. The front end and the back end. In memorization, we are most concerned with the back end. The back end of visualization is simple. At the end of an event – in fact, at the end of every event you should pause and recount the salient parts of that event. That’s the first time you visit that topic.

Then, at the end of the day, before you go to bed – and this is very important – you visit those thoughts again and you visualize the event again and this time analyze your impressions of it and analyze your conclusions. But I warn you of one simple fact. Try not to attach negative connotations to those events because you do not want to introduce negative energies to your mind while you are preparing for bed. Reflection times are not about negative reinforcement. They are about seeing things as they are.

When you visualize things right after it happens and you visualize them again before you get to bed, it helps the hippocampus decide what it needs to keep in long-term memory and what it needs to keep in short-term memory and what it needs to send to the subconscious instantly. Then while you sleep and the rest of the body is silent, the mind goes about setting up the associations and the processes to access that memory. Now depending on what those associations are, you will find that some of your dreams could be related to that but in an awkward way they may not have any apparent relationship, but because of the way the associations of the neurons work – for instance, red shoes could be associated to the neuron with red blood – so while the association is being encoded by the electrochemical bond you could end up dreaming of blood. That is not always the case, but it happens constantly and it happens often. The times when we don't see the relationship is when we can't find the common denominator between what happened today and what happened somewhere else in the mind.

Chapter 5

Peg Systems and How to Memorize Numbers

Every memory system out there uses the associations that we talked so much about in all the chapters leading up to this point. Association is an important thing and mankind has found a way to short-circuit the system by attaching it to pegs and those pegs are then used to make a memory. Here is how the peg system works.

If you want to remember something you take that thing and attach it to something you already know. Guess what that does? It goes into you hippocampus already preprogrammed with instructions in what previous memories to attach itself to, so the hippocampus automatically stores that in the long-term memory. Your peg can be anything. Here is one I use for phone numbers.

Imagine a keypad of a phone that typically looks like this:

If you want to remember a phone number, all you have to do is remember the shape that it forms when you key it out. So for instance, if the number is (212) 2242-3669, you would remember it by tracing the number on the keypad. This does two things. First, it pegs the number to a design and the keypad. The keypad is something that you know very well and it is already part of your neural network. All you have to do now is create an association with that keypad and do it so that your visual encoding visualizes the pattern that your finger makes when dialing the number.

Look at the pattern your finger makes when you key in the number above. Now do that with any number. So let’s try this exercise.

Picture this by retracing the number a few times:

1. 1123

2. 1254

3. 2356

4. 5698

As you read those numbers make an imaginary trace with your fingers as though you are actually pushing the keys with your finger. Do it in your mind. Close your eyes and do it three to four times.

Remember the trace your hand makes. You see, you can remember it. Now just do all the numbers from beginning to end. Suddenly you can now remember 16 numbers in a row.

Let's try this in another way.

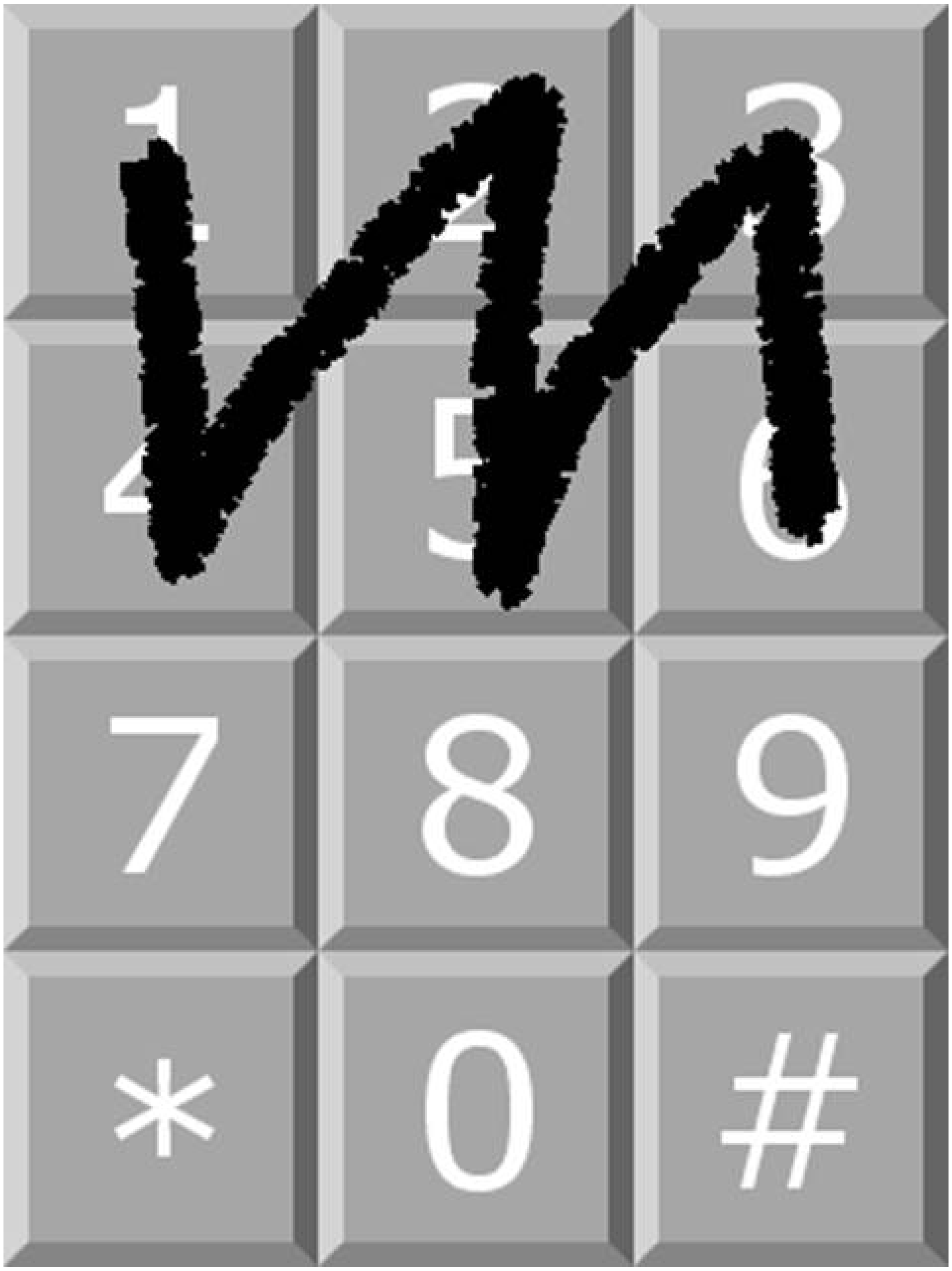
Let’s visualize the keypad again, and let’s draw the numbers out using your index finger as though you were tapping the number.

1. 123456

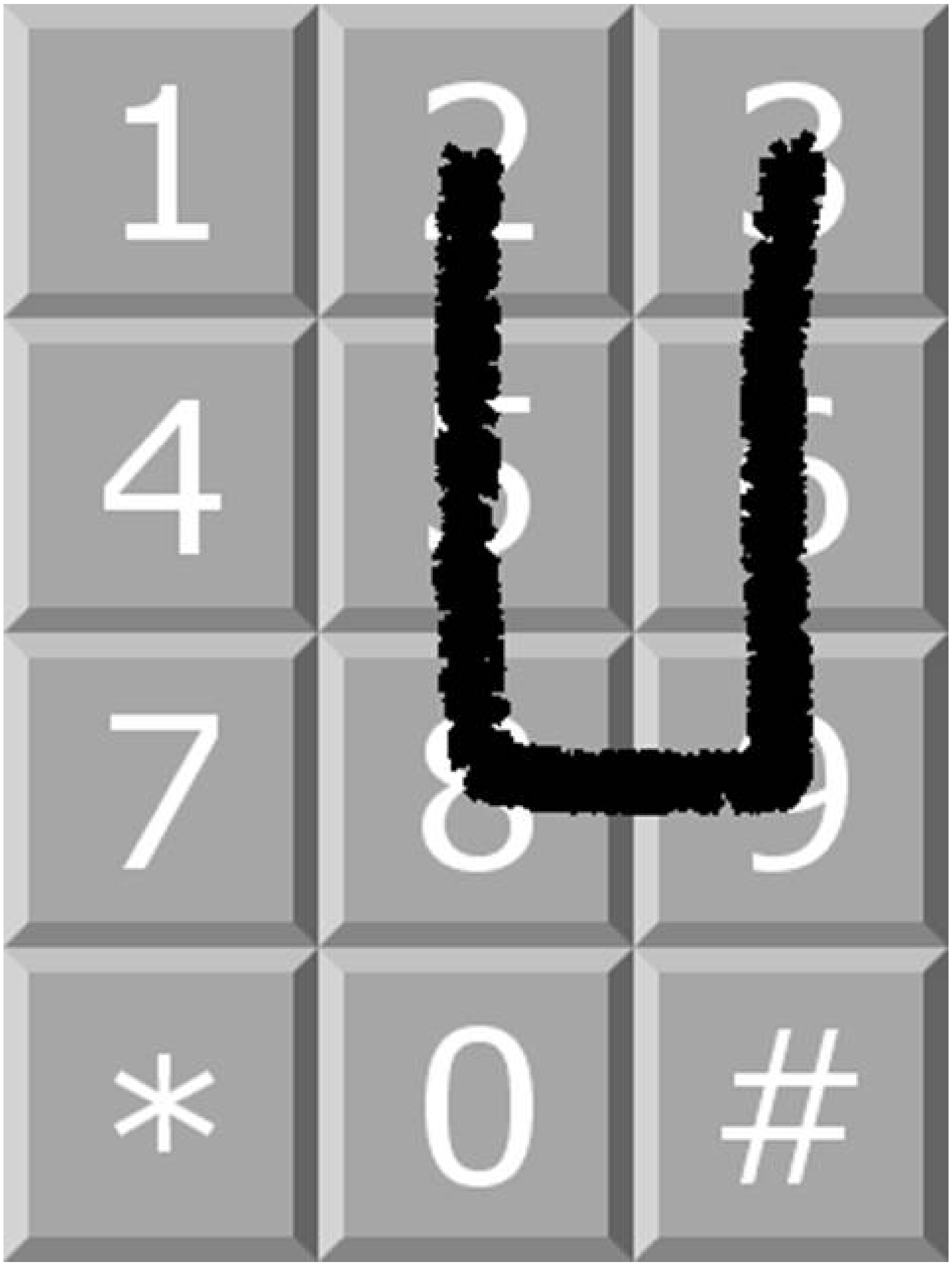
2. 142536

3. 369852

4. 985623

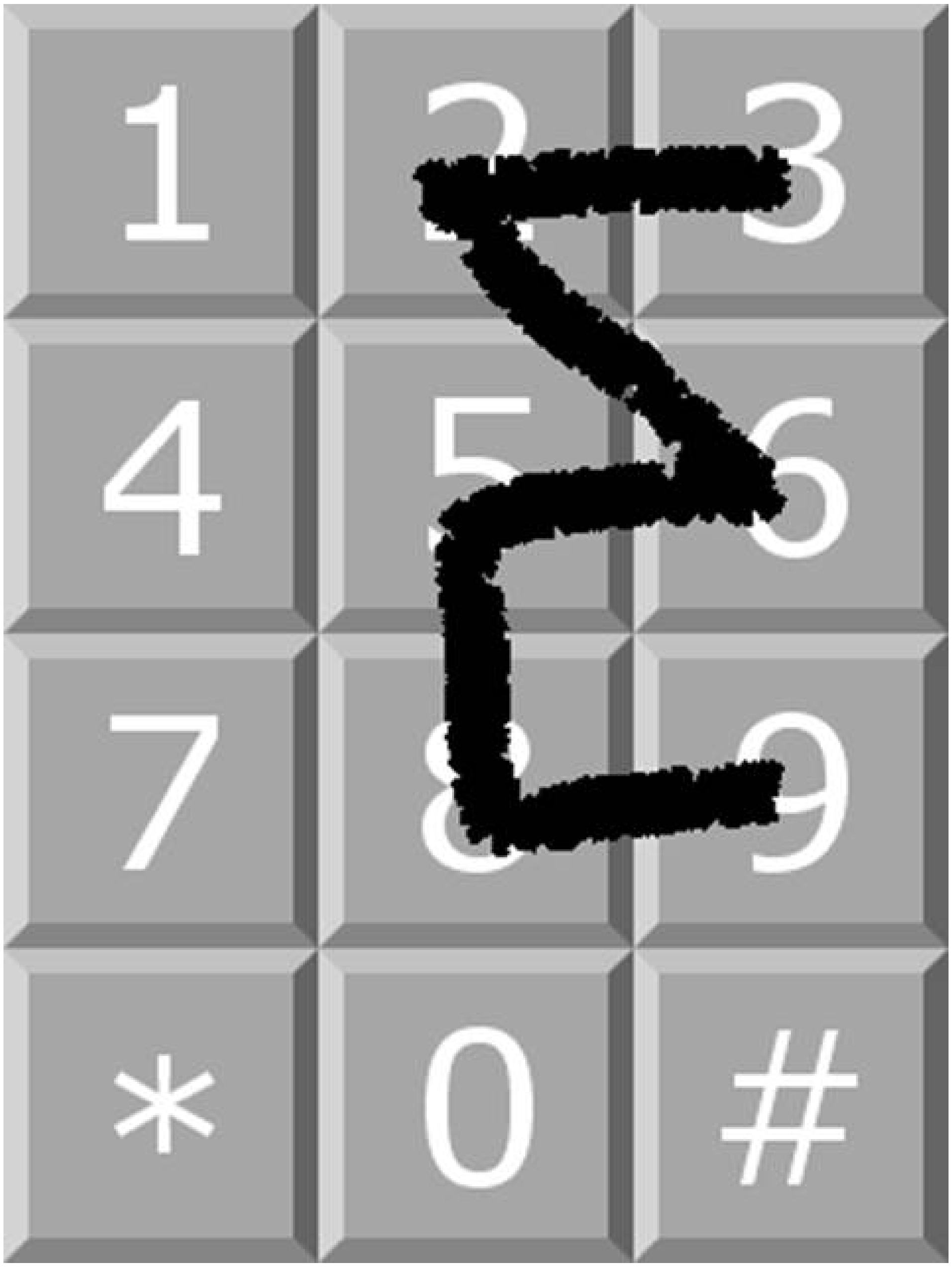


The pattern above is for 142536. Do you see what I mean by trace the number with your finger? Now all you have to do is remember the pattern it makes. Lets try another one.



This one is for 369852. Get it?

OK, one more.



This one was for 985623.

Now without looking at all of them try to see if you can recall all the numbers in one go.

When you see the patterns in the figures above you start to see that you can associate the shapes which go into your visual memory and transfer them to the memory of numbers. Visualization that can be used in this way is extremely powerful because it easily enters the long-term memory establishment and sticks in your mind.

If you got it right you will be able to belt out all 24 numbers. How was that for memory by association or the peg system?

Now I have to admit, this is just about doing it for short number, I could do about 30 to 50 numbers easily this way and hold on to it for a couple of years. If it is a number that I use often, then after a few repetitions I find that I do not need the Peg to remember the number, it just rolls off the tongue and I find that the sound of the numbers as it rolls off my tongue is the memory key that I need. That just means to say that it becomes second nature to remember the number that is part of your memory now.

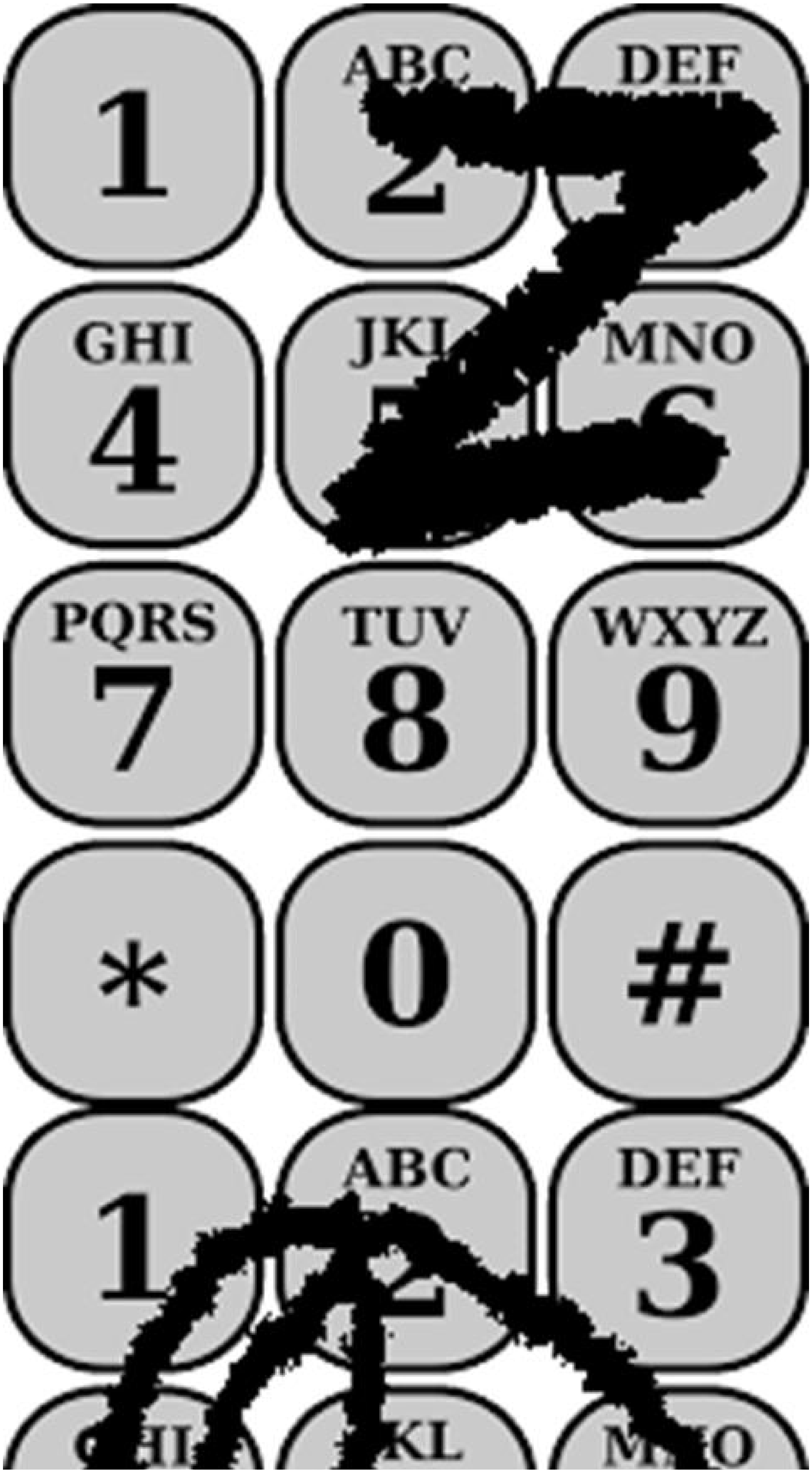
To remember the longer sequence of numbers just break them up into fours or sixes and draw each pattern on the keypad. The more you practice this the more numbers you can retain and the longer the number that you can do. Even though my limit is at about 50, you could conceivably do more if you practice.

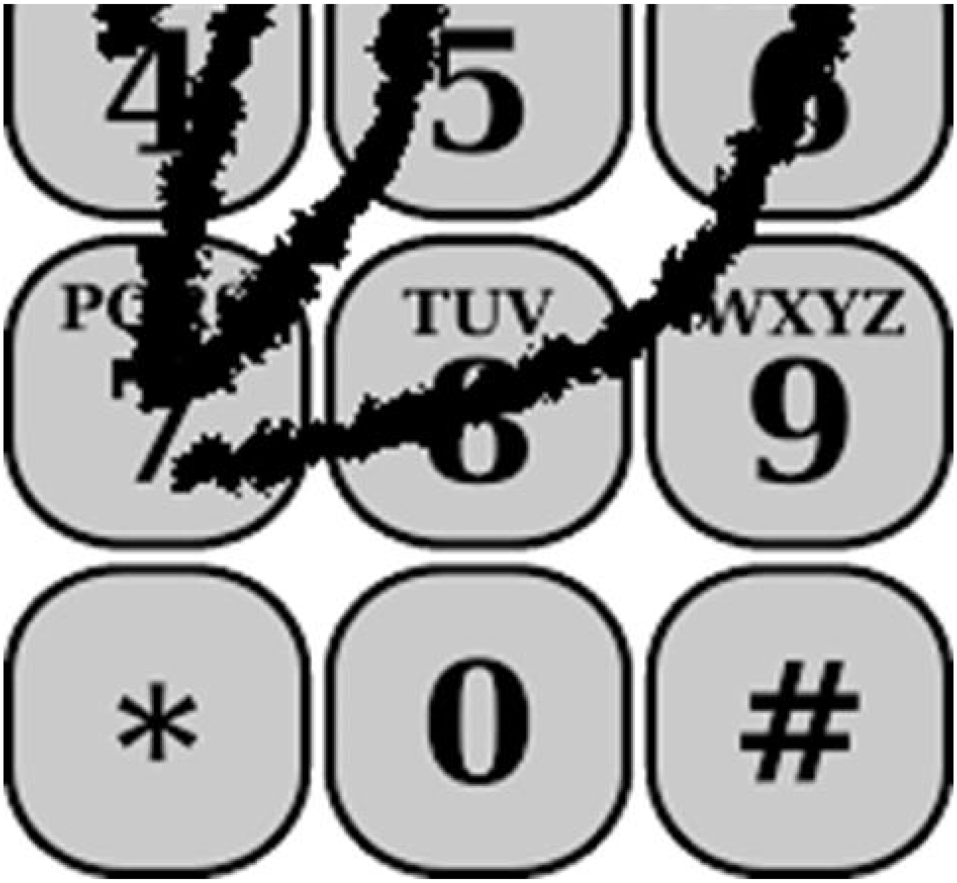
The next method of number memorization is to be able to attach syllables to the number and making words out of them. I found that making even numbers start and end with consonants while having odd numbers start and end with vowels allowed me to make up syllabic words that allowed me to remember numbers as well.

For instance, 1 = ono, 2 = tot, 3 = ere, 4 = fof, 5 = afa, 6 = sis, 7 = asa, 8 = tat, 9 = ana, and zero equals to oh.

This takes some getting used to but once you get used to it, it becomes extremely easy to use and you can go on for longer numbers with the memory of the sound. It works well for phone numbers and zip codes. For instance, 7723457 would sound like this – asaasatoterefofafaasa – if you categorize them they sound like this asaasa totere fofafa asa .. so all you have to remember is asasa totere fofafa asa. You can make up any replacement for the numbers that you wish.

If you wanted to remember names and numbers you could also make it in such a way that you use the alphabets on the keypad. Usually, 2 has ABC, 3 has DEF and so on. So if you want to remember a street address, here is how you can do it. Let say the address was 2356 Harbor Dr. This is what you would do


1
ABC 2
DEF 3
GHI 4
JKL 5
MNO 6
PQRS 7
TUV 8
WXYZ 9
*
0
#
1
ABC 2
DEF 3
GHI
JKL
MNO



So the first keypad gives you 2356 and the second keypad gives you H-A-R-B-O-R. These strategies are what are referred to as Peg systems and converting things to visual representations.

Once you get a hang of this, you will be able to use this even more effectively by combining this with the memory palace that you will see in Chapter 9. For those of you who are gadget enthusiasts and you have access to a 3D printer, then here is a trick that really worked well for things that you need to remember over the long term.

This kind of memory is more than mind maps that you will find in chapter 8. But it is a great way to physically hod what you want to remember and that way your tactile encoding is also engaged into the process of making a memory.

How to Remember Names of People and Places

It is absolutely embarrassing, to say the least when we come face to face with a person and we do not have the slightest memory of their name. Has this happened to you? I am sure it has and while it is not one of the more major faux pas, it does seem to happen to rather often. There are three reasons why this happens.

1. We don't know the person very well and the first few meetings were fairly casual.

2. It's been some time since we met the person and we have nothing in common with them, or

3. We just weren't paying attention when we were introduced.

These are just the more common reasons. I am sure there are tonnes more. But they all seem to boil down to the same fact, that we just didn't care enough to remember -regardless of how difficult or foreign their name was to remember.

If you are in the habit of forgetting an acquaintance's name then here are the steps you need to practice to put that embarrassment behind you.

First, you need to make it a habit to repeat the person's name clearly when you are first introduced. Not only is this considered polite in all cultures (as long as you place their salutations properly) it is also a way for you to associate a face with a name. It's like pointing to a ball and telling your toddler B-A-L-L. Human memory world well when you catch their attention and associate a particular sound to a particular image.

When you say the name of the person, along with the salutations if necessary, you should break it down by syllable. So for instance, Andrew Cardigan, would be pronounced AN – DREW CAR-DI-GAN. Five syllables. Remember the five syllables.

While you repeat the name, make sure you are looking him. her straight in the eye and you do a firm handshake. If you are in a conversation with the person you just met, find the occasion or steer the conversation toward an opportunity that will require you to say his name – not the full name but at least his first name, or his last name if you are using a title. That would be a good way to remember his preferred way of being addressed.

If you have a way to talk about his name, even better. If it is a foreign name or one that is not so prevalent in your culture, you can ask about his name if the occasion arises. So, here it is again – this is how you remember the name of a person you just met for the first time.

1. Listen to the name as it is told to you.

2. Break it down into syllables.

3. Repeat it when you shake his/her hand and look directly into their eyes.

4. Find the occasion to say the name again at least three times in the next 10 minutes.

On the other hand, you may be told a name of a person without being introduced to them, or without them being present. In that case, remember where you are when you hear the name. Focus on where you are standing and associate the name of the person you just heard about.

The key to remembering a person's name is to associate the name with the person's face. You have to make it a habit to associate things that you want to remember with things that you already remember or with things that you can visually detect.

There is one last way that you can remember names and this is by picking out the person's most striking feature and associating their name with that feature. If the name and the feature rhyme even better, but the chances of that happening are slim, at best. So for instance, if you are introduced to someone like Pauly, you can call him Smiley Pauly (it doesn't matter if he is not always smiling). Jumping Joe, Dashing Dan, Julie Guli… Do you get the idea?

Good.

Now, what about names of places.

There are three ways you can remember names of places easily. You can either use memory pegs like the ones we talked about earlier in this chapter, or you can use the repetition method. You can repeat the name a few times and give it context. Remembering places is fairly easy if you visualize the streets and the places that you've been to or looking at images of the place – typically one that is endemic to that particular place.

Repetition

Context

Visualize

These are the three things you can do to remember names of places.

To close out this chapter, I want to make the point again that memory is really about paying attention. If you pay attention to something, then your hippocampus instantly gets it that you need to keep that memory easily accessible and when you are asleep, it will start the process of linking that name or place to existing associative neurons. If you need to remember it instantly, you can use mnemonics or you can use the methods we described above. But whatever it is, you can't go wrong by just simply paying attention and being mindful of the name and the place. You'll be surprised it works wonders.

Chapter 6

Bad Habits that Erode Memory

There are a few bad habits that disrupt our natural ability to remember. Yes, that’s right, all of us have microprocessors and memory devices in our heads that is more superior than anything that has yet to be invented. I have seen human beings memorize and recall accurately 65,000 digits after just reading it. I have seen human beings perform complex calculations in their heads, and I have seen kids speed read entire books and then repeat line and verse verbatim. I have witnessed this with my own eyes and it serves to give me hope with all that we can do.

We don’t seem to realize that it is because of strange habits that we pick up along the way that we start to lose these mental agilities and this cerebral dexterity. It is because of our lifestyle – some of which we can control and some which we can’t that we lose the laser focus needed to perform such tasks. These bad habits come in many forms and these lifestyle choices come in inscrutable ways. Some of which we don’t even think can be a bad habit, actually is and it all starts with the complacency with our own ability.

As powerful as your mind is, it is extremely fragile. That is the main reason it is protected in a shroud of the hardest material your body can make. That is the reason there is a barrier that protects toxins that are ingested from reaching the brain, and that is the reason there is a blood-brain barrier. But, even with all these protections and safeguards, the brain is still susceptible to external assaults.

Alcohol, tobacco, opioids, just to name three can have a devastating and long-term impact on the brain and its functionality. Noxious fumes and second-hand smoke can also have an impact, and to a lesser degree so can stimulants in excessive quantities.

But the negative effects on the brain and its ability to think and remember is not limited to physical substances it can also be degraded by the things we feel, touch, hear and see. Of the ones that enter the brain’s innermost recesses what we see has the greatest impact on how the brain works. If you don’t think you have photographic or eidetic memory, go see a shocking image or something that is sexually explicit and you will realize that the image sticks in your head for some time.

Remember, your brain is constantly recording and it becomes what it records. For instance, if you constantly read about and immerse yourself in the knowledge of a particular person, you will start to notice that the brain subconsciously starts to take on the behavior and the characteristics of that person. You will start to walk that way, and you will even think that way. That is the reason you are able to answer a question like - “What would so-and-so do?”

There are three broad categories of bad habits that you need to concern yourself with to be able to enhance your memory and thereafter improve your life. If you have habits or proclivities in any one or more of these categories then you need to put those to rest before you start on your quest to increase your powers of the mind.

The three categories are divided as follows:

1. Substance overuse
2. Unwilling to concentrate or focus
3. Exposure to visual or semantic material that is corrosive

These categories cover a number of areas and in fact, some of these areas overlap. But in essence, if you give it a moment, the fundamental similarities between the three categories will be evident and you will get an idea of how to conduct your affairs in order to keep yourself a peak performance. Most of us strike a balance between what we take pleasure in and that includes taking pleasure in remembering and taking pleasure in activities that erode memory power. The choice is yours.

Substance overuse refers to the consumption of alcohol, tobacco, opioids or any sort of substance that you ingest that has an effect on the central nervous system or the mind. There was a time when the brightest minds from the halls of Ivy League schools thought that the best way to go deeper into the mind was to consume air become users of LSD – a strong hallucinogen.

But researchers since then have found evidence that LSD and any form of hallucinogen eventually degrade the fabric of the mind and reduces its ability to function optimally. Instead, meditation and mindfulness work out to be better forms of mind exploration tools than LSD and opioids. Even for pain relief meditation works better than pain relief medication. Not only does meditation focus the mind, it can reduce discomfort, pain, and symptoms associated with traumatic stress.

That brings us to the second category of habits that erode the mind and memorization powers. That is the inability or the unwillingness to focus. What may have started out when you were young to not focus has evolved and taken you on a trajectory that prevents you from focusing when you are older. The typical cause of the inability to focus is a dietary imbalance. There are other reasons such as stress and fear, but the most prevalent is dietary. Most kids start off life with the improper balance of nutrition. Too much sugar is one element that causes the inability to focus and that in turn creates the habit to not focus as an adult. Whatever the reason, you need to bring your diet into balance now and make a firm decision to focus. The fix for the inability to focus and for substance over sue are the same. The answer is meditation that you can do easily and effectively every day.

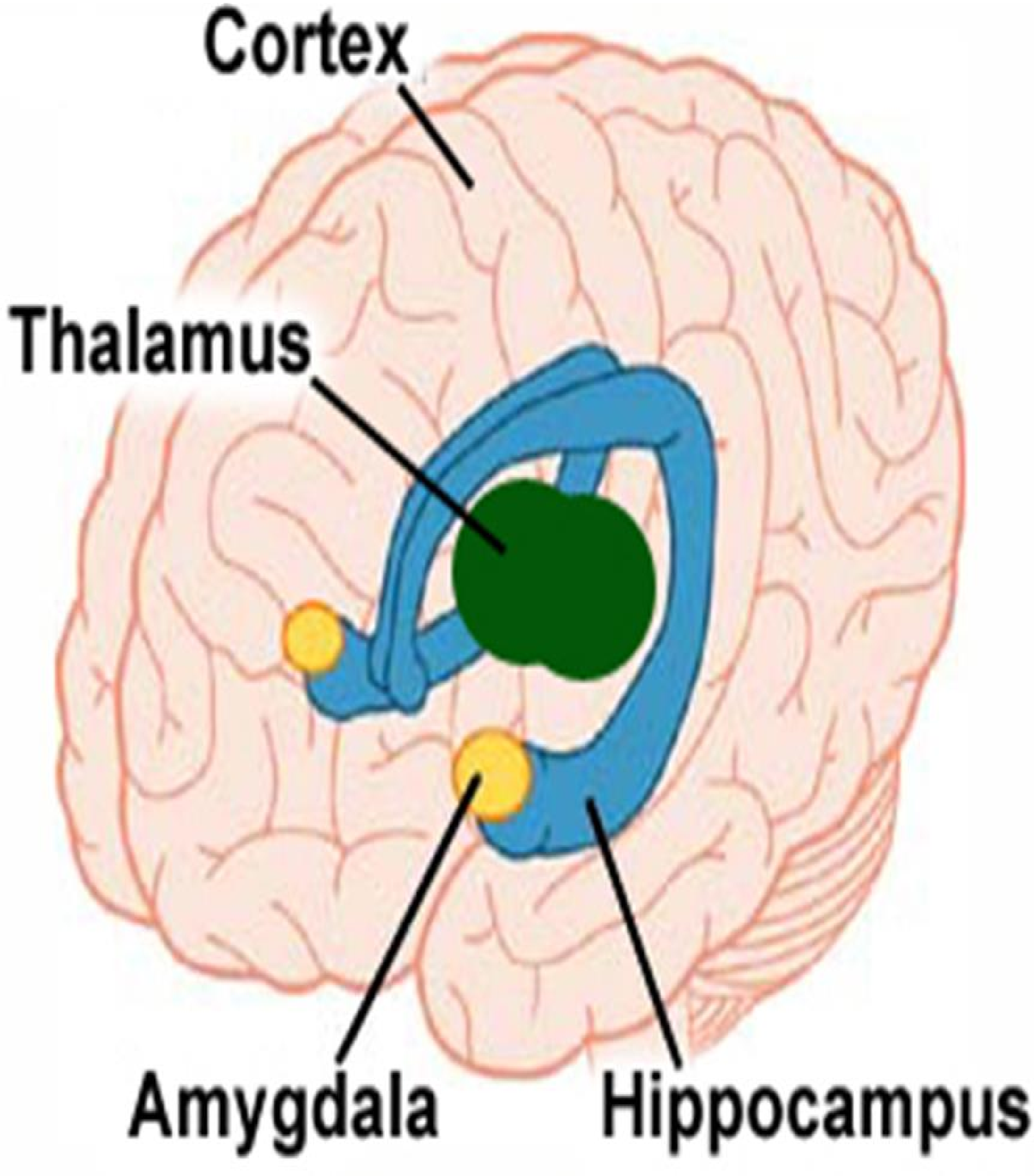
Meditation is not a religious experience and it is not one that follows the tenets of any faith or teaching. If you have religious beliefs, meditation will not clash with them. Meditation is purely an exercise that works for the mind. It’s like going to the gym and lifting all the weights you can to pump up your biceps, but you will not be as effective as you can be if you didn’t warm up those muscles with calisthenics. In both cases, you could do fine, but you would achieve better results if you did the underlying exercises. Meditation limbers the mind and settles its tendencies that are caused by substances and bad habits. Meditation returns the mind to its original state and allows you to reprogram the neural network wiring so as to make it more effective and more efficient.

Stay away from bad and poor habits and instead find pleasure in things that build you up rather than things that break you down. This is the foundation for a strong mind and superior memory.

Chapter 7

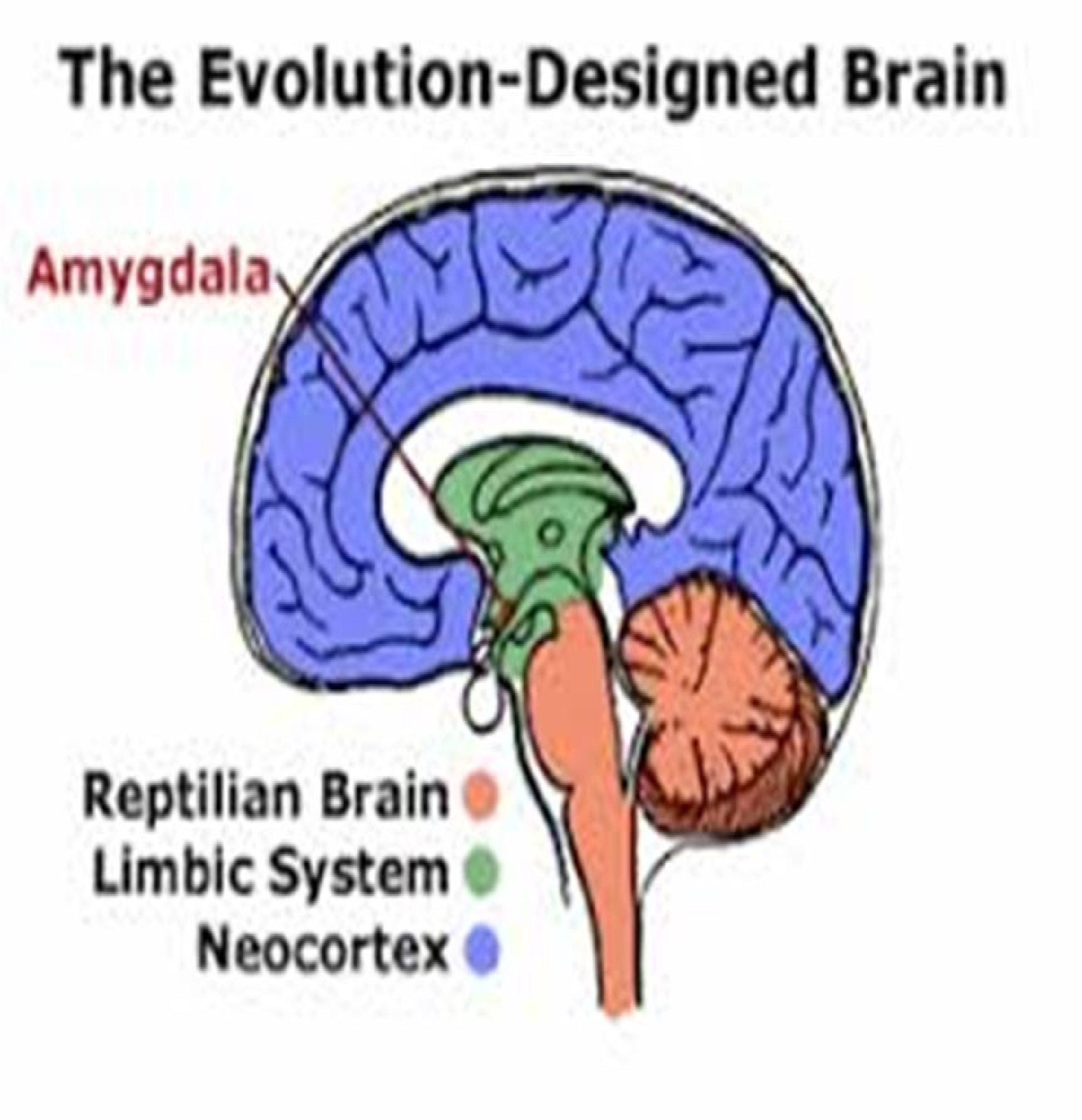
Emotions as Memory

We tend to think of emotions as something that happens in the chest or torso, and cognitive thought and memories as something that happens in the head – the brain. But in actual fact, they all happen in the brain. You just feel it happening in your chest because the sensations that are activated are those that are activated in the chest. We talk about matters of the heart not because the heart does any of the feelings by a part of the brain, but it feels like the heart. It is, however, linguistically symbolic to refer to is as the heart and the matters of the heart so that we can visually and spatially distinguish one frame of mind with another. But let me conclusively tell you that it all happens in the brain.



That doesn’t mean that it is more or less important. Emotional feelings are an important part of our functional presence in the universe. It helps up bond with others and it helps us activate physical powers that are not always present if left to the cogitations of the mind. For instance you will not be able to get the physical strength to fight or run in the event of danger if you were to leave all you powers to the newer part of the brain or the cerebellum and the neocortex. For that you need the inclusion of the amygdala which sits at the back of the brain and controls a lot of what the body does. So even if your neocortex does not initially see the reason to react boldly, the back of your mind has prepared you for fight or flight.

In the same way, the back of your mind is one that we think of as being more primal. Why? Because it indeed was formed early in the developmental stage of the human brain. The first to form, as you remember for the first part of the book was the central nervous system and on top of that formed what we have as the brain stem and the neocortex above it. You can see the color image below.



As such your emotional center and memory has a direct link to the movement and sensation of the body. What happens in that part of the brain can and will feel like it is originating from the part of the body that is below the neck.

In the event of anxiety and worry, these are located in the back of the head and they can cause physical symptoms. When your anxiety gets too high, you can even experience physical reactions. It can even activate your immune system and you can have an event like hives or allergies.

The memories that are stored in here are typically ones that are life-threatening. There are three areas of your existence that is primal. The first is all that has to do with survival. The second is all that has to do with reproduction, and finally, all that has to do with habitation. And it happens in that order. If your body had to choose between eating and habitat, it will choose to eat. If it has to choose between breathing and eating it will choose to breathe. But the primal senses are fallible and modern technology can disrupt its optimal functioning. The most provocative marketing efforts that you see across the various media today are designed to overcome the neocortex by way of the primal systems. For instance, you know that you shouldn't buy that car because it is beyond your budget, but that sexy model on the hood of the car, beckons your primal instinct and you don't know why, but that car feels extremely attractive.

How does all this relate to memory? Well, you have to understand that the emotional memory that you have is a powerful one because the endorphins that the primal brain feeds the neocortex is a large contributor to memory. The mind automatically records things that give it the pleasure in long-term format. That is why it is o easy to get addicted to sweet. You can't seem to forget it. Sex is the same, and it is so powerful that even after your biological need to procreate is gone, it still persists. Because, sex, and all that comes with it, is part of the primal senses and it is part of the encoding in our being for the procreation and the continuity of the species.

How can you use emotional memory? Simple, associate it with things that are primal in your life. Associate names of foods to things that you want to remember. Associate it to sex symbols that you privately admire. Associate it with things that the primal side of your brain and the part of your brain that is in seductive and you will find that you remember those things better.

It may not always be easy to do and it is not something that you want to promote simply because you are trying to empower your neocortex functionality and by relying on emotional memory you end up empowering your emotional and primal side. Typically you should be able to use it in the right setting and at the same time relegate emotional memory to the background when you find it less conducive to the life at hand.

Chapter 8

Mind Mapping

Mind mapping is a great way to do two things. First, it is a great way to brainstorm and associate things in real life the way your mind associate words and concept. The second it is also a great way to remember things visually. It aligns the way the mind works with the way that you work.

You see, the way we communicate in language and word structures is not the best way for the mind to decode and encode. If you feed it a sentence it is by stringent memory that it gets used to the structure. For instance, if you were raised speaking English, then you automatically place sentences in context of subject, verb, object – and mostly in that order. But if you grow up speaking a different kind of language lets say Latin, that subject-verb-object sequence is not there. It is, instead – subject-object-verb.

So, for instance, if you were to write, in English, “The girl went to the market”, you would know that the subject, in this case, is the girl, and the sentence is all about what she is doing, where she is going and the object she is manipulating. The 'market' being placed in the end, tells you directly that that is the object and that is the term that is being acted upon or manipulated by the subject. The verb tells you what the subject is doing to the object.

This is not the case in Latin. In Latin, the direct translation would be ‘girl market went.’ Ok, lest we make this a grammar lesson, let me drive the point that language can sometimes be a hindrance to how we think and if we want to remember things accurately one of the ways we can do it is to commit the material to understanding first and then place that in memory.

So for instance, if you were to look at a formula of area and look at it as

A = Lh, meaning Area of square is equal to the length of its horizontal multiplied by the height of its vertical. You could either remember it as A=Lh. Now, in this case, it is simple, but what happens when you look at something like this:

$$\left(\frac{\partial T}{\partial V}\right)_S = -\left(\frac{\partial p}{\partial S}\right)_V \qquad ....(i)$$

$$\left(\frac{\partial T}{\partial p}\right)_S = \left(\frac{\partial p}{\partial S}\right)_p \qquad ....(ii)$$

$$\left(\frac{\partial p}{\partial T}\right)_V = \left(\frac{\partial S}{\partial V}\right)_T \qquad ....(iii)$$

$$\left(\frac{\partial V}{\partial T}\right)_p = -\left(\frac{\partial S}{\partial p}\right)_T \qquad ....(iv)$$

In this case, you could either train your self for an eidetic memory and just memorize the entire image and decipher it later. Or you could sit down understand the relationships between all of the components and then place that into memory. Understanding is just the form of familiarity with the subject by associating what you don't know what you already know. When you mind map for memory, that is exactly what you are doing. You are taking what you already know and mapping it to the thing that you are trying to learn also that your mind can then sort in a way that you can remember it in the future.

In fact, one of the things that you can do is to use mind mapping as an aid to organizing the way your brain remembers and you will find that in the future it will be able to do it without using a paper and pen to map first. It will be able to just get straight to the map in your head.

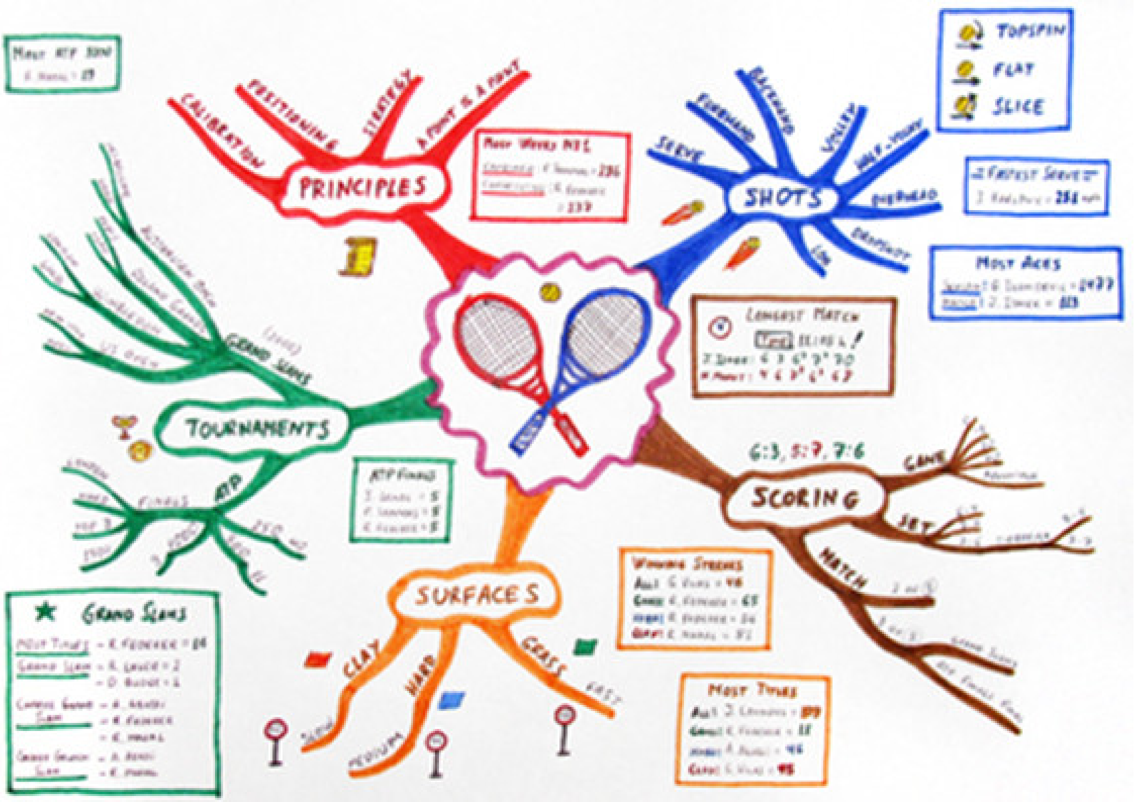
Another way you can map your thoughts and memories is to be able to use your imagination. Imagination is an amazing tool to be creative, but it is also an amazing tool to use an aid to remember things. For instance, the whole idea of constellations allows you to remember where the locations of largest stars or celestial bodies are. They don't really look like Scorpions or Warriors, but if you use your imagination, you can draw them in such a way that you can now remember the location of these stars. Just like we did with the keypad in the previous chapter.

So, imagination can be a powerful thing and one of the reasons nursery rhymes exist is to be able to attach complex concepts – what we call moral of the story, to simple stories. It is a great way for children to remember things and for them to realize what concepts are when they grow up.

When you map your thoughts, what you are doing is taking what is essential and dropping out all the unnecessary words that you typically find in a sentence. When you say the little grammar lesson above about subject, verb, and object, there are also other parts of the sentence, like nouns, pronouns, adjectives and so on that complicate a sentence more than it has to be for the purpose of conveying a memory.

But when you draw a mind map you can leave out all those unnecessary words and you get to keep the essential keywords. That increases the efficiency of the memory and increases the number of associations the keyword can make.

A mind map gives you three-dimensional data and that worked well with the way memories work since they can be multi-dimensional as well. On the other hand, words that are in print and the sentences that use them can be two or three dimensional at the most. So, for instance, if you were to use color pens to make a mind map or you used symbols that mean something to you then you are able to dr better associative diagrams that you can with words. In fact, when you look at a mind map it indeed looks like a neural network.


PRINCIPLES
CALIBRATION
POSITIONING
STRATEGY
A POINT IS A POINT
SHOTS
SERVE
FOREHAND
BACKHAND
VOLLEY
HALF-VOLLEY
OVERHEAD
DROPSHOT
LOB
TOPSPIN
FLAT
SLICE
FASTEST SERVE
MOST ACES
LONGEST MATCH
TOURNAMENTS
GRAND SLAMS
US OPEN
ATP
FINALS
ATP FINALS
GRAND SLAMS
SCORING
6:3, 5:7, 7:6
GAME
SET
MATCH
WINNING STREAKS
MOST TITLES
SURFACES
CLAY
HARD
GRASS
SLOW
MEDIUM
FAST

The image on the left is a mind map, and the image on the right is a representation of the neurons and the associates it makes with other neurons. One single neuron can be connected to millions of others and that is connected to millions more and so if you play the association game you can jump from, let’s say, pianos to music, to Beethoven, to deafness, to hearing, to eardrums, to drums to band, to high school and so on, they are connected in the mind.

Mind maps offer depth on a depthless page, but words are not so efficient, so when you want to remember something converting it to a mind map can make all the difference.

One of my favorite things to do is print 3d objects on my 3d printer and have them symbolize something that I wish to incorporate into my mindset. It is a very profound way of inculcating complex concepts that are designed to penetrate the depths of your character. We all need a sort of moral compass, and that moral compass can be programmed if we so chose into our memory. But it is not sufficient to memorize statements and sing anthems. If you could appeal to all four of your encoding processes at the same time then your mind create countless associations while you engage with the object.

For instance, I have a mind map that snakes out n all kinds of directions and is coded in three colors. It is the way I want to filter all the things that happen to me and the way I process all the things that come my way – whether it is is convenient or otherwise. I took this item and drew it out on a CAD software and printed it out on a 3d printer. The result is a model of this thought process that I apply everything to and it sits on my desk. As part of my daily routine and hold this model and everything that it represents lights up inside me.

We all have such things. For my grandmother, it was her rosary. For my mother, it was her statue of St Christopher. For my wife it's our wedding band. Each person has a particular object that we attach a tremendous amount of thoughts to and it helps us remember. You can make your own too.

Chapter 9

Memory Palace Method

As far as shortcuts go, the memory palace method is one that you can find prevalent in almost all the literature out there. So I am going to add a little twist to it. Memory palace takes advantage of your spatial awareness and your ability to recognize where you are and orientate you. This is one of the things that is placed deep within your amygdala and your primal memory circuits because event before the neocortex evolved, animals were able to find their way home wherever they were. They were able to remember the point of origin and thus the memory palace is something that you can use to plant memories in the back of your brain.

I've had the opportunity to live in many places across the globe in my life and each place has a very different topographical map. It also has very different street systems and addressing methodology. SO it gives me a vast array of templates to chose from. In fact, the way I choose my memory palace is based on an association I first made when I am introduced to the subject.

So let's give this a try. The first thing you need to do is take a place that you are totally familiar with Take that place and walk around it in your mind. If you have an apartment that you are familiar with walk through that apartment and remove all the things from there and then remember that place with clarity and accuracy.

Once you get that memory in place put all the things back in it (mentally speaking, of course) Then once that is done walk around the place again and make that your memory place. Assign rooms and hallways to various things and events Once you do that you are no ready to get started to use it as your memory palace.

This is an extension of the memory peg that we saw in Chapter 5. Because what you are doing is using something very familiar, some place that you know and have been inside, to be part of your memory aid. This is a powerful tool. Because not only us this image real, as opposed to be something abstract, this image is larger than you and so occupies a sense of amazement and wonder.

If you have a childhood home that you place the happiest memories then that would be a good place to keep as your memory palace.

So let's get started. Imagine if you want to memorize the steps make a custard. This is a fairly easy task to start with but let us use it to initiate our understanding of using the memory place. So start with the ingredients and say that you need a quart of milk, three eggs, a pound of sugar and vanilla extract, or flavoring. To remember the ingredients, just look inside the fridge in your kitchen and see the three eggs in the egg tray, the quart of milk – exactly the amount you need in the jar on the bottom tray at the back of the fridge. Picture the vanilla extract in the shelf below the eggs and the three pounds of sugar in the three-pound jar on the counter. It also works well if you approach this systematically. Go to the fridge, get the eggs from the top, get the vanilla below it, then move down to the milk in the lower tray. Close the fridge door, bring all the ingredients to the counter and find your sugar there. That's it.

Now place all the ingredients in the bowl that you take from the shelf above where you are standing and use the whisk that is in the jar in front of you; mix that thoroughly as you hold the jar in your hand against your hip and walk around the house for a few minutes. Keep mixing and then when you get back to the kitchen and place the batter in the oven. That's it. You're done.

By associating the custard recipe with a familiar location in your palace you will be able to remember that recipe for a very long time. If you want to remember it even more, and want to convert that to long-term memory, then as soon as you read it and form the place association stop for a while and visualize it or draw a mind map. Using only keywords. So the keywords match the memory palace and when you do that the memory sticks. At the end of the day, reflect on that memory, ponder the use of sugar, the amount of sugar, ponder the use of vanilla, and just think about the whole thing in your mind before you fall asleep. Do this along with all the other things that you did in the day that you want to reflect on. When you wake up in the morning you will find that you have an instinctual repose to the custard recipe.

And that's how the memory place works. It's best if you use all the different memorization techniques together to back each other up. Combine the use of memory places with mind maps and even the peg system. But if you can combine them with the most powerful memory aid of all, you will find there is nothing you can't remember. That's coming up next.

Chapter 10

Memorization Technique

There are numerous memorization techniques that have been championed across the web. Many are mere parlor tricks, and some are just too dependent on genetics to make it plausible for many of us to attempt.

If you want to really improve your memory then you need to focus on the fact that your brain works on a concept we called neuroplasticity. The term neuro, we understand that it has to do with the fundamental structure of the brain. The term plasticity comes from plastic and it refers to the way your mind is elastic and can be molded and repaired easily.

Whatever deficiencies caused by bad habits you have had in the past, or whatever ailments that may have befallen you, even if it was a stroke, you will be able to return to superior use if you do what is necessary and go through great effort to do it.

I have witnessed a seventy-six-year-old man who lived a healthy lifestyle suffer a stoke and lose the right side of his body. Within six months he was walking again with a walking stick and within a year he was walking almost fully normal. He regained full speech ability and full use of his limbs. How?

He willed it and did everything he needed to do to relearn how to walk, talk and locate his arms. He taught his brain to reform the necessary neurons to do what he last did when he was a toddler – to learn to walk.

The brain is a brilliant organ that can grow new neurons and bridge old ones if we follow the right path. The same with memorization. We are all born with exquisite memory potential, but we lose it along the way to improper nutrition, bad eating habits, poor recreational habits, degrading content consumption and on. All this reduces our original ability to remember at a glance, and have poor recall and even poorer resolve.

If you step away from your bad habits and instead go back to the way things are supposed to be and you practice to teach your mind to remember and recall you will find that it will do so easily. And that is what this chapter is all about. We have all had our ‘stroke’ so to speak. We are all patients of forgetfulness and lack the ability to do what the brain is originally designed to do. Record and recall. So, what we are going to do is return to the way it was meant to be and recover from this deficiency.

Most of the strategies that you need to do are in this book across the last nine chapters and the introduction. What we have to do now is take all that and follow this simple set of steps.

1. Intention

2. Resolve

3. Meditation

4. Practice

5. Exercise

Another way you can remember this is this IN-RE-ME-P_EXER – Inremepexer – which stands for:

IN tention

RE solve

ME ditation

P ractice

EXER cise

Let’s start with Intention. You need to have a solemn intention that from this point onward you would like to return your memory to what it is supposed to be. You want to realize that all that you are is based on the memories that you have. Everything from your intelligence to your creativity is based on your intention. You need to close your eyes and look at what it is you want and you need to make the decision that your memory is everything. It is the basis of your intelligence, it is the basis of your social life, it is the basis of your career and it is the basis of your ambition. Without memory, you would not know who the man or woman is in that mirror you look at every morning. You want to be able to associate that face with something and you want to be able to make sure that your memory is intact and super specific.

This is the basis of your technique. Without intention, you will never be able to communicate to your brain that you intend to strengthen it. If you desire it, it will come. If you desire it, it will happen. If you desire it the opportunities that you need to move in that direction will become apparent. But it all starts with intention. So, that is exactly what you need to start with. No technique is going to materialize if you do not first solidify your intention.

This is the intention that you need to advance and here is the sentence that you need to repeat continuously.

I want to have elephant-sized memory and lightning fast recall.

That's the intention. Next is the resolve. Your resolve is the commitment that you will do whatever it takes no matter what comes in your way, no matter what distracts you, you will come back to it. Because changing the way you remember things and the way you advance your life deserves no less. So, the next thing you add to the original intention is this:

… and I will do whatever it takes.

So now your original sentence looks like this.

I want to have elephant-sized memory and lightning fast recall and I will do whatever it takes.

Once you do that then its time to actually do whatever it takes and the thing that it takes is that you resolve your bad habits and turn to good habits that enhance your mind. You have to eat adequately but not overeat. You have to work out adequately but not overexert yourself. You have to read and practice memory exercises, but not be distracted from other areas of your life. To be able to do this you need to balance your life and heal your mind. Here is where meditation comes in. You need to learn and practice meditation in a way that is not religious but rather a basis for the mind to rest on.

The best way to do meditation is to advance the concept of disregarding the chaos and allowing the mind to focus on the silence. Each of us has a silence that is the core of our being. Upon that silence, all thoughts and all character are built. When you focus on that silence then the mind no longer has anything to record, it records only the background and the silence. Into that silence, if you place what you want to remember, the mind absorbs that which is presented without confusion and places that ready for recall whenever you want.

That is the point of meditation. Meditation is the tool that allows the mind to practice living in silence and not have to record the chaos. If your mind is in constant chaos then the mind has to record that and there is a lot of resources that are spent on trying to decipher which goes to short-term memory and which goes to long-term memory.

So whenever you want to remember something the best way to do it is to go into meditation mode and just absorb the material that you want to meditate. I do that for speed reading and I do that for memorizing as well. Both happen fairly rapidly. I also spend a lot of time developing my mind by memorizing random times and learning new things.

Aside from meditation, you should spend your time reflecting like we talked about in all the chapters that preceded this. Reflection allows your mind to figure out easily what to keep in long-term storage and what to place in short-term storage. If you do it this way, you will see that it learns the patterns that you would like to remember and it automatically decides on the best way to accomplish that. This is also where the intention at the start of the process comes in. If you decide that you want to remember everything that happens to you. It is possible. You will be able to remember everything and you will be able to recall facts about things most people do not care about. But that is an amazing gift to pursue.

This is the practice part of your memorization techniques. All the different shortcuts that you learn throughout this book will come in handy and here is how they really help. When you take the effort to remember and the mind is rewarded every time it recalls, then it is going to understand that your goal of remembering is highly prized. So it is going to go about remembering and recording everything in a way that it can recall effectively and it will be at the ready when you need it to be.

Memorization is not a trick and those who use parlor tricks to do it are diminishing the power of the mind and using it as child's play. I understand that it is a means to an end, but it is not the best long-term solution.

Finally we look at exercising. There are two kinds of exercises that you need to do. The first is that you need to get bodily exercises where you work out enough to be able to get significant amounts of oxygen and endorphins in your blood. This is a great way to build your mind. In the course of evolution, the greatest period of brain growth happened during the period of high oxygen availability.

Oxygen is a catalyst for brain function and you need to be able to get lots of it. The best way to do that, short of plugging yourself up to an O2 canister is to work out constantly and that will saturate your blood with oxygen. Your brain will grow. That's the other thing don't worry about the maximum your brain can take in. That is a myth. There is no maximum. When our ancestors started to enlarge their brain, the cranial vault kept up and more resources were sent to the building of bigger brains. So if you have to, you will grow a bigger brain, so don't listen to those who are afraid of knowledge and think that your head will explode.

Conclusion

Your first step is a sincere and deep reflection. When you do deep reflection you are actually identifying the neurons, the pathways that those neurons form and the bunch of networks that all point to the area that you want to change. Of course, you will not be cognizant of where those neurons are and how they look like. Your brain takes care of that for you. All you have to do is think about the areas in your life that you need to change and the areas in your life that you are looking at that need to be improved.

Reflection doesn't require any special skill except for the honesty and the ability to trace your steps from the things that you have been responsible for to the lot in life you currently experience. The first character of a person who will be successful in reflection is the person that will be brutally honest with himself and a person who will take responsibility for all the things that happen to him and the causes of those things. You see, without taking responsibility for something you will not be able to control it in the future and if you do not control that element in the future you will not be able to change your lot in life.

The moment you start with reflection and you start telling yourself that you are going to, from this day forth, take responsibility for your actions, you would have already started the changes in the neural pathways that govern your outlook on life and luck.

After repeatedly telling yourself this, you will find that it will start to become your reality and you will be able to reach deeper into your reflection to find the areas that you need to identify that will give you the life that you are in search of. If you think you want a new BMW. You know what, you're probably going to be able to get it if you engage in this, but why would you want to stop at something so pedestrian and inconsequential. Do you think Steve Jobs wished that he bought a new Mercedes? No he wished to be the instrument that changed the world, and his pathways evolved and he did change the world, the Mercedes he bought was secondary.

In the process of reflection, the first step is to understand what you want. The second step is to find out what part of you is blocking you from getting there. That will help you to find where you are at the moment. You are essentially trying to plot a map that shows where you are and where you want to go. This and the desire to take responsibility for your life will begin to get the process of neuroplasticity working in your favor. Desire and belief, as we said are the two things that you need to get yourself in the game.

Your second step is the process of asking. When you ask, and you ask repeatedly, your subconscious starts the force of taking all the things you know, whether you are aware of it or not, and it starts to plot a path to where you need to be. Asking is a powerful tool and you should never discount the act of asking. If you are too shy to ask, that is a sure sign that you either feel that you don't deserve it, or you are too arrogant to ask for it. Both of those characteristics will trip you up and mess with your ability to alter the neurons that will put you in the frame of achievement. When you ask, it also helps to ask that you become the person that can achieve what you are looking for, not just ask for the thing that you want.

The final step in your effort to remember is to meditate. Meditation has proven to place your brain in such perfect state in the frequencies that it needs, that neuroplasticity is promoted aggressively in various state of meditation. Sleep does the same thing if you do it right.

In the same way that meditation can be of aid, focused sleep can do the same thing. But you will have to do it in a certain way, different from what you are typically used to. First of all, you need to tire yourself out with a very high level of work in the day. Thi means that you work out and get the necessary neurotransmitter pumping. With vigorous workout, you will get your body to release the right hormones that will promote deep sleep.

Before you sleep conduct your reflection, your asking, and your meditation. Make sure you keep your meditation focus and not blank. There are two kinds of meditation. One is to keep your mind absolutely blank and let your subconscious take over. The other kind of meditation is to increase your brain's conscious capacity and concentrating intently on just one thing, in this case, concentrate on the thing that you are asking for. Do not fantasize.

When you desire, believe, ask and meditate you set up the necessary elements for your brain to change the way it is to become the way it needs to be to give you what you desire. No other method can effect faster and longer lasting change than following the three steps that are simple.

But there is one impediment to this that most people are not aware of. If in the process of reflecting, and asking you are confused over what you want, your brain is not going to allow any changes to its existing pathways. It is the way nature protects us from flighty and transient fancies. You have to ask for something that you really want and it is a longer-term change that you are making. If you want short-term changes, then you should look at changing your habits. But if you want long-term changes and that would mean that you want to change the way you see success or the way you work out the way you acquire knowledge, then you attack the brain from with the tools you have learned here.

It is important that you understand the way your mind works and the way neuroplasticity works with the different parts of your mental processes. You can see discernible changes after you consistently practice the three steps above over the course of at least two weeks.